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PART A

IONOSPHERIC DATA

ISSUED
APRIL 1958

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F164
PART A

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
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Issued
22 Apr. 1958

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer critical frequency; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If the count is four or less, the data are considered insufficient and no median value is computed.

2. For the F2 layer, h'F or foEs, if the count is from five to nine, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as the count is at least five, the median is not considered doubtful. A count of at least 5 is considered sufficient for an h'Es median.

3. For all layers, if more than half of the data used to compute the medians are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Ordinarily, a blank space in the fEs or foEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F2 or h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

d. The tables may contain median values of either foEs or fEs. The graph of median Es corresponds to the table. Percentage curves of fEs are estimated from values of foEs when necessary.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948
December		150*	150	42	11	15	33	53	86	108	114
November		150*	147	35	10	16	38	52	87	112	115
October		150*	135	31	10	17	43	52	90	114	116
September	150*	150*	119	30	8	18	46	54	91	115	117
August	150*	150*	105	27	8	18	49	57	96	111	123
July	150*	150*	95	22	8	20	51	60	101	108	125
June	150*	150*	89	18	9	21	52	63	103	108	129
May	150*	150*	77	16	10	22	52	68	102	108	130
April	150*	150*	68	13	10	24	52	74	101	109	133
March	150*	150*	60	14	11	27	52	78	103	111	133
February	150*	150*	53	14	12	29	51	82	103	113	133
January	150*	150*	48	12	14	30	53	85	105	112	130

*This number is believed representative of solar activity at a maximum portion of the current sunspot cycle.

The latest available information follows concerning the corresponding observed Zürich numbers beginning with the minimum of April 1954. Final numbers are listed through June 1957.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64	73	81
1956	89	98	109	119	127	137	146	150	151	156	160	164
1957	170	172	174	181	186	188	191	194	196			

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
- Brisbane, Australia
- Canberra, Australia
- Townsville, Australia

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geology and Geophysics:
- Watheroo, Western Australia

British Department of Scientific and Industrial Research, Radio Research Board:
- Falkland Is.
- Ibadan, Nigeria (University College of Ibadan)
- Inverness, Scotland
- Singapore, British Malaya
- Slough, England

Defence Research Board, Canada:
- Churchill, Canada
- Meanook, Canada
- Ottawa, Canada
- Victoria, Canada

Danish National Committee of URSI:
- Godhavn, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:
- Nurmijarvi, Finland

Icelandic Post and Telegraph Administration:
- Reykjavik, Iceland

Indian Council of Scientific and Industrial Research, Radio Research Committee, New Delhi, India:
- Calcutta (Institute of Radio Physics and Electronics)
- Kodaikanal (India Meteorological Department)

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
- Akita, Japan
- Tokyo (Kokubunji), Japan
- Wakkanai, Japan
- Yamagawa, Japan

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway

Manila Observatory:
Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation, Moscow, U.S.S.R.:
Alma-Ata
Irkutsk
Leningrad
Simferopol
Sverdlovsk
Tomsk
Yakutsk

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa

Ebro Observatory:
Tortosa, Spain

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:
Lulea, Sweden

United States Army Signal Corps:
Adak, Alaska
Fletchers Ice I.
Ft. Monmouth, New Jersey
Okinawa I.
St. John's, Newfoundland
Thule, Greenland
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Chiclayo, Peru
Chimbote, Peru
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone

National Bureau of Standards (Central Radio Propagation Laboratory), continued:
Point Barrow, Alaska
Pole Station
Puerto Rico, W. I.

ERRATA

1. CRPL-F160(A), p. 19, table 2: foF2 at 2200 should read >18.0; foEs at 1100 should read 4.8.

2. CRPL-F160(A), p. 20, table 9: foF2 at 1500 should read 17.5.

EXAMPLES OF IONOSPHERIC VERTICAL SOUNDINGS
Amundson-Scott (Geographical South Pole); December 23, 1957
(Geomagnetic Latitude 78°N)

The following ionograms were obtained at the vertical sounding station located at the south geographical pole. They are typical of polar day conditions for December at this geomagnetic latitude. Ionospheric data are scaled directly from these records onto the daily f-plot, a graph of frequency characteristics vs. time. The f-plot for the day represented by these soundings is found on the following page. Medians as found in the Tables of Ionospheric Data are calculated using hourly values taken from the f-plot or directly from the ionogram.

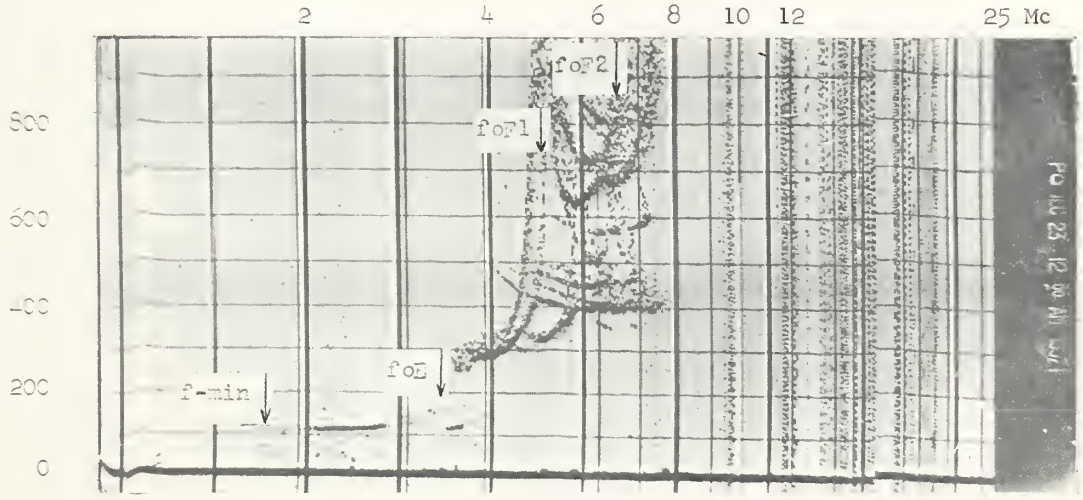


Fig. A. Pole Station, December 23, 1957, 0000 hours, Universal Time

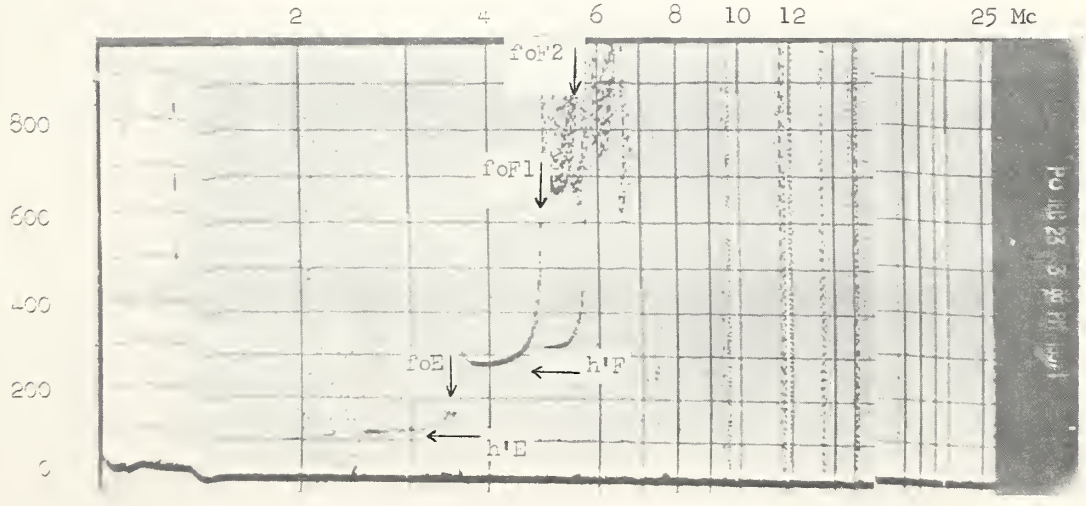
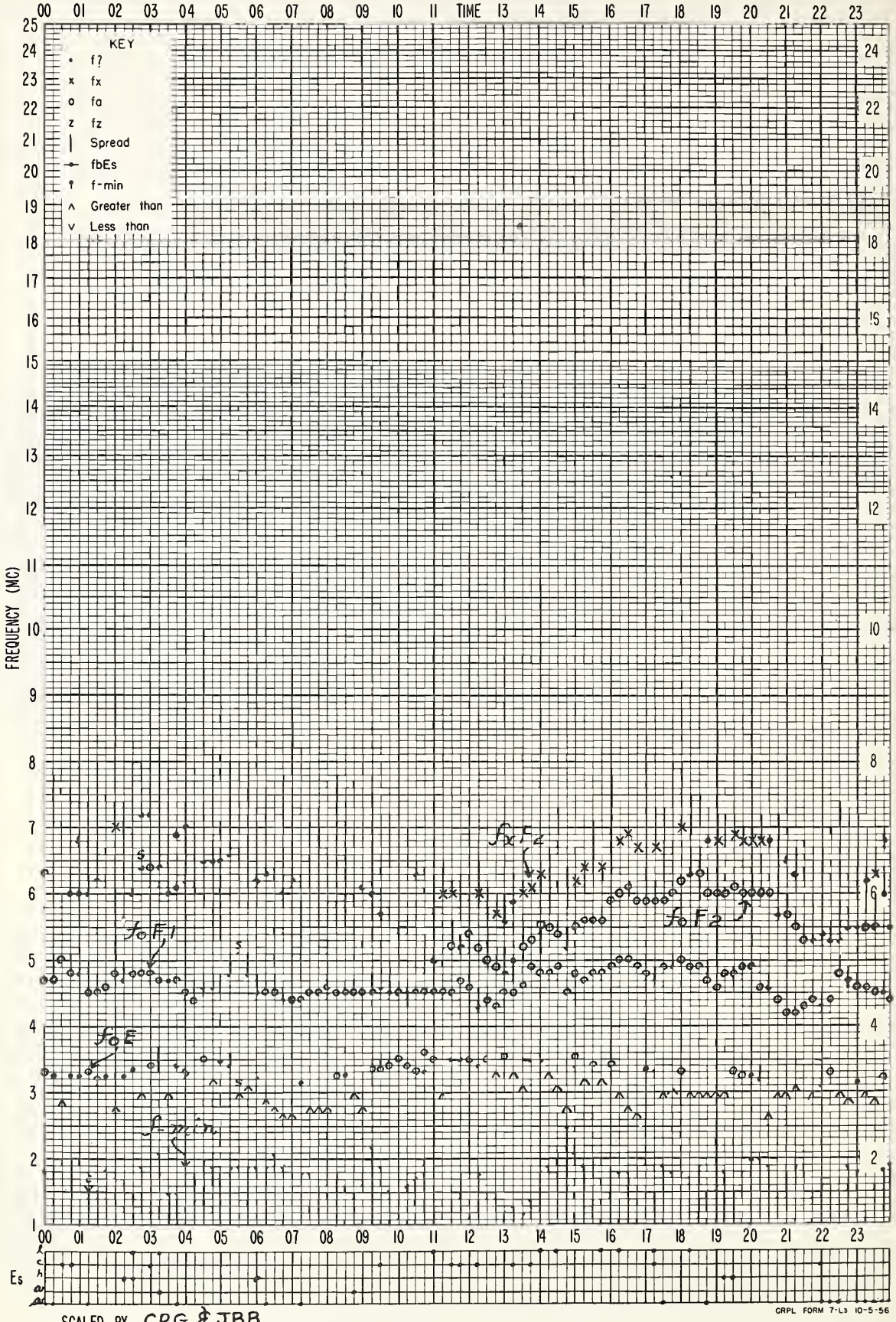


Fig. B. Pole Station, December 23, 1957, 1500 hours, Universal Time.

STATION POLE STATION f-PLOT OF IONOSPHERIC DATA DATE Dec. 23, 1957



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TABLES OF IONOSPHERIC DATA

DECEMBER 1957 - MARCH 1956

Table 1

Fletchers Ice I. (80.0°N, 114.0°W)* December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.4)	265		---	---		----
01		(6.2)	270		---	---		----
02		(6.3)	270		---	---		(2.80)
03		(5.8)	270		---	---		(2.60)
04		(6.2)	250		---	---		(2.80)
05		(6.2)	265		---	---		(2.65)
06		(5.2)	265		---	---		(2.60)
07		(5.1)	270		---	---		(2.70)
08		(5.4)	255		---	---		(2.80)
09		(7.2)	265		---	---		----
10		(4.8)	255		---	---		(2.75)
11		(6.4)	260		---	---		(2.75)
12		(7.0)	255		---	---		(2.75)
13		(8.1)	250		---	---		2.80
14		(9.0)	260		---	---		(2.70)
15		(7.0)	260		---	---		(2.80)
16		(7.6)	270		---	---		(2.75)
17		(7.4)	260					(2.70)
18		(9.0)	255					(2.80)
19		(7.6)	260					----
20		(6.8)	<270					(2.65)
21		(6.6)	260					----
22		(8.2)	260					----
23		(6.3)	270					(2.70)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Preliminary estimated average position.

Table 2

Narsarssuak, Greenland (61.2°N, 45.4°W) December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.3)	(390)		---	----	4.8	(2.35)
01		(5.4)	(390)		---	----	3.6	(2.40)
02		(5.3)	(375)		---	----	3.7	(2.40)
03		(5.4)	365		---	----	3.7	(2.50)
04		(5.4)	(350)		---	----	3.8	(2.60)
05		(5.6)	340		---	----	>3.7	(2.60)
06		(5.6)	(330)		---	----	3.9	(2.55)
07		(5.4)	(320)		---	----	3.0	(2.65)
00		(6.0)	310		---	----		(2.65)
09		(8.3)	280		120	(1.90)		(2.80)
10		11.1	260		136	(2.30)		2.85
11		13.2	250		135	(2.50)		2.85
12		13.1	250		129	(2.50)		2.85
13		12.6	240		127	2.50		2.85
14		11.5	255		135	(2.20)		2.85
15		(8.2)	260		121	(1.95)		(2.85)
16		(6.2)	300		---	----	2.2	(2.65)
17		(5.7)	330		---	----	3.1	(2.60)
18		(5.5)	(380)		---	----	3.6	(2.45)
19		(4.9)	(330)		---	----	3.6	(2.35)
20		(5.7)	(350)		---	----	4.5	(2.40)
21		(5.6)	(325)		---	----	3.9	(2.40)
22		(6.1)	(380)		---	----	4.2	(2.45)
23		(5.5)	(370)		---	----	5.6	(2.40)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Oslo, Norway (60.0°N, 11.1°E) December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.9	350					2.30
01		3.4	340					2.40
02		3.4	340				1.2	2.40
03		3.4	315					2.40
04		3.6	300					2.55
05		3.7	290					2.55
06		3.6	260					2.50
07		3.8	260					2.55
08		4.8	250		---	(1.35)		(2.50)
09		8.3	250		---	1.85	3.0	2.80
10		11.3	250		---	2.25	3.1	2.85
11		13.5	250		---	2.45	3.1	2.85
12	---	14.5	240		135	2.55	3.0	2.85
13	---	15.5	240		---	2.50	3.0	2.85
14		15.1	240		135	2.35	2.8	2.85
15		>14.0	230		---	2.00		2.85
16		13.2	220		---	(1.40)		2.85
17		10.6	225					2.85
18		9.2	230					2.80
19		6.9	240					2.70
20		5.4	260					2.60
21		4.7	295					2.50
22		4.7	325					2.40
23		4.0	350					2.30

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 4

Maui, Hawaii (20.8°N, 156.5°W) December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.4	240					2.80
01		8.2	250					2.80
02		7.2	230					2.90
03		6.0	230					2.80
04		5.2	255					2.40
05		4.8	295					2.40
06		5.2	300					2.55
07		8.0	290		147	1.80		2.80
00		12.0	255		119	2.90		2.95
09	---	14.5	245		115	3.50		2.95
10	---	14.5	240		111	3.85		2.80
11	---	14.1	235	---	111	4.00	4.0	2.65
12	410	14.0	230	7.6	109	4.10		2.50
13	405	14.3	230	7.2	111	4.05		2.50
14	420	14.4	240	7.0	(113)	4.00		2.45
15	410	14.0	245	6.7	(117)	3.80	4.0	2.45
16	(390)	13.5	250	---	<119	3.30	3.7	2.50
17		13.3	260		119	2.50	3.5	2.55
18		12.7	260		---	----	3.8	2.65
19		12.1	250				3.3	2.70
20		12.3	270				3.8	2.75
21		12.3	250				2.7	2.80
22		12.2	240				1.7	2.95
23		10.0	235					2.85

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Pole Station (90.0°S) December 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	610	5.7	260	4.6	109	(3.20)	3.7	2.20
01	610	6.0	260	4.5	110	(3.20)		2.25
02	620	(5.8)	<260	4.5	109	(3.20		2.20
03	620	5.8	265	4.5	111	(3.20)	3.9	2.20
04	625	5.8	255	4.4	109	3.30		2.10
05	640	5.7	265	4.4	109	(3.20)		2.10
06	640	5.8	<270	4.3	109	(3.15)		2.10
07	625	(5.6)	<280	4.4	109	(3.20)		2.10
08	660	5.5	(260)	4.4	109	(3.25)		2.10
09	690	5.2	245	4.3	109	(3.30)		G
10	650	4.6	250	4.3	109	(3.35)		G
11	785	5.0	<260	4.4	109	(3.40)		2.00
12	640	<4.8	280	4.4	109	3.40		G
13	650	5.0	280	4.4	109	3.40		2.00
14	670	5.5	<275	4.5	109	(3.40)		2.10
15	600	5.9	<280	4.6	109	(3.30)		2.25
16	595	5.9	(270)	4.6	109	(3.30)		2.20
17	630	5.8	270	4.5	109	(3.30)		2.15
18	630	5.6	260	4.5	109	3.30		2.15
19	620	5.8	270	4.6	109	(3.20)		2.20
20	640	5.8	<255	4.5	109	(3.20)		2.10
21	605	5.5	270	4.5	109	(3.20)	3.6	2.20
22	580	5.7	260	4.7	109	(3.20)	3.8	2.20
23	645	5.6	265	4.7	109	(3.20)	4.7	2.20

Time: 0.0°.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Fletchers Ice I. (80.5°N, 109.0°W)* November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.0)	270					(2.60)
01		(6.6)	260					(2.75)
02		(6.8)	260					(2.65)
03		(6.8)	265		---	---		(2.70)
04		(7.0)	260		---	---		(2.75)
05		(6.0)	260		---	---		2,60
06		(8.0)	260		---	---		(2.70)
07		(6.7)	260		---	---		(2.70)
00		(6.6)	260		---	---	1.2	(2.80)
09		(8.2)	(260)		---	---		(2.80)
10		(7.6)	(250)		---	---		(2.70)
11		(8.3)	250		---	---		(2.75)
12		(6.6)	260		---	---		(2.75)
13		8.2	<265		---	---		2.70
14		(9.8)	250		---	---		(2.75)
15		8.2	260		---	---		2.80
16		(7.6)	255		---	---		(2.70)
17		(7.7)	250		---	---		2.70
18		9.0	265		---	---		2.75
19		(8.0)	255		---	---		(2.70)
20		(9.0)	265		---	---		(2.60)
21		6.7	250		---	---		(2.70)
22		(7.0)	250		---	---		(2.60)
23		(6.2)	255					----

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.
*Preliminary estimated average position.

Table 7

Thule, Greenland (76.6°N, 68.7°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.0)	275					(2.55)
01		(6.0)	270					(2.50)
02		(6.4)	270					(2.60)
03		---	270					----
04		(5.0)	275					(2.60)
05		(5.2)	260					(2.70)
06		(5.3)	270					(2.70)
07		(4.8)	265					(2.60)
00		(4.9)	265					(2.60)
09		(7.1)	270					(2.65)
10		(6.6)	265		---	---		(2.60)
11		(6.3)	270		---	---		(2.60)
12		(7.3)	265		---	---		(2.65)
13		(8.2)	260		---	---		(2.75)
14		(8.2)	260					(2.60)
15		(8.0)	270					(2.70)
16		(7.0)	265					(2.60)
17		(7.2)	270					(2.50)
18		(6.2)	270					(2.60)
19		(6.7)	255					(2.50)
20		(7.0)	260					2.65
21		(7.8)	270					(2.65)
22		(6.0)	270					(2.60)
23		(6.4)	265					(2.70)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 8

Point Barrow, Alaska (71.3°N, 156.8°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		4.7	290				4.6	(2.45)
01		(5.0)	300				4.6	----
02		>5.0	320				4.5	(2.60)
03		(5.2)	330		---	---	3.5	----
04		(4.8)	330				2.4	(2.45)
05		(6.0)	335				2.6	----
06		(4.8)	<360		---	---	2.8	----
07		(6.1)	310		---	---	3.0	----
00		(5.2)	330		---	---		(2.35)
09		(6.6)	(305)		---	---		----
10		7.6	280		---	---		(2.70)
11		8.2	270		---	---		2.80
12		8.5	265		---	---		2.80
13		10.2	265		---	---		2.80
14		10.8	255		---	---		2.85
15		11.4	<255		---	---		2.75
16		>10.5	260		---	---		2.80
17		10.1	270		---	---		2.70
18		7.4	275		---	---		2.80
19		(6.2)	295				2.8	(2.70)
20		5.4	300		---	---	3.3	(2.75)
21		(5.3)	280		---	---	3.7	(2.70)
22		(5.6)	280				3.9	(2.80)
23		(5.1)	290		---	---	3.1	----

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 9

Fairbanks, Alaska (64.9°N, 147.8°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(4.4)					4.6	(2.65)
01		(4.3)					4.5	(2.50)
02		(5.5)					4.9	(2.50)
03		(5.2)					3.8	----
04		(5.0)					4.2	(2.60)
05		(5.8)					4.2	(2.60)
06		(5.2)					4.0	(2.50)
07		(5.6)						(2.55)
08		(6.5)			---	---		(2.75)
09		(7.8)			---	---		(2.95)
10		10.1			---	---		2.90
11		11.0			---	---		2.90
12		12.0			---	---		2.95
13		13.0			---	---		2.85
14		13.2			---	---		2.90
15		13.2			---	---		2.90
16		12.3						2.85
17		11.2						2.85
18		9.6						2.90
19		7.4						2.90
20		(5.8)					2.4	(2.90)
21		(5.3)					3.0	(2.90)
22		(4.8)					3.5	(2.80)
23		(4.3)					5.1	(2.75)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 10

Reykjavik, Iceland (64.1°N, 21.8°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		---	365				>3.4	----
01		---	360				2.9	----
02		(4.9)	340				3.2	----
03		(5.7)	340					----
04		---	325					----
05		(5.5)	300					(2.50)
06		(5.3)	310					(2.50)
07		(5.1)	310					(2.60)
00		(6.3)	300					2.60
09		(8.0)	275		---	----		(2.75)
10		>10.5	250		---	----		(2.70)
11		>11.9	250		---	----		2.70
12		>12.5	245		---	----		(2.60)
13		(12.0)	240		---	----		(2.75)
14		>11.3	240		---	----		(2.80)
15		>11.1	250		<149	2.45		(2.60)
16		>10.0	265		---	----		(2.80)
17		>9.7	300					----
18		(6.0)	310				3.1	(2.50)
19		(5.8)	340					(2.50)
20		(5.0)	350				3.8	----
21		---	350				4.6	
22		(5.0)	410				4.2	----
23		---	370				4.3	----

Time: 15.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 11

Narsarssuak, Greenland (61.2°N, 45.4°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.3)	(360)		---	----	4.0	(2.40)
01		(5.1)	(350)		---	----	2.8	(2.35)
02		(5.6)	(355)		127	(2.60)	2.8	(2.40)
03		(6.0)	355		---	----	3.3	(2.50)
04		(6.2)	365		---	----	3.7	(2.50)
05		(5.9)	345		---	----	3.2	(2.50)
06		(5.8)	330		---	----		(2.60)
07		(6.0)	310		---	----		(2.60)
08		(7.4)	280		147	2.05		(2.80)
09		10.3	255		137	2.20		2.80
10		12.4	250		131	2.50		2.80
11	---	14.3	250	---	125	(2.60)		2.80
12	---	14.0	240		123	2.70		2.80
13	---	14.0	240		123	2.55		2.85
14	---	10.7	250		127	2.40		2.85
15	---	(7.8)	270		127	(2.30)		2.80
16		(6.2)	285		137	(2.00)	2.8	(2.70)
17		(6.0)	300		---	----	3.2	(2.70)
18		(6.0)	330		---	----	3.9	(2.40)
19		(6.2)	(335)		---	----	4.4	(2.40)
20		(6.6)	(340)		---	----	4.4	(2.60)
21		(6.8)	(360)		---	----	4.4	(2.40)
22		(6.0)	350		---	----	4.3	(2.45)
23		(6.0)	(345)		---	----	3.9	(2.40)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

Upsala, Sweden (59.8°N, 17.6°E) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	335				3.0	2.4
01		4.8	315				3.1	2.4
02		4.8	320				3.2	2.4
03		4.5	310				3.0	2.4
04		4.4	295				3.0	2.4
05		4.3	265				3.0	2.4
06		4.2	260		---	----	3.0	2.5
07		5.8	250		---	E	3.2	2.6
08		9.0	245		120	2.00	4.1	2.8
09		12.4	240		110	2.30	3.6	2.8
10		14.0	240		110	2.65	3.0	2.8
11		14.7	240		110	2.80	3.0	2.8
12		15.6	240		110	2.80	3.0	2.7
13		15.4	240		110	2.70	3.2	2.7
14		15.0	240		120	2.40	3.0	2.7
15		14.5	230		140	2.00	3.0	2.8
16		13.3	230		---	E	3.1	2.8
17		11.0	225		---	----	3.1	2.8
18		9.2	230				3.0	2.8
19		7.2	240				2.4	2.7
20		6.3	260					2.6
21		5.9	290				2.1	2.45
22		5.4	300				2.2	2.4
23		5.2	320				3.0	2.4

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 13

Adak, Alaska (51.9°N, 176.6°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.9	(350)					2.30
01		3.7	(360)					2.25
02		3.6	<370					2.30
03		3.6	(380)					2.30
04		3.6	(365)					2.25
05		3.5	(355)					2.30
06		3.8	(325)					2.30
07		6.8	260		<119	----	1.3	2.60
08		10.8	240		---	----		2.95
09		13.7	235		121	2.90		3.00
10		15.4	230		121	3.10		2.90
11		15.5	230		123	3.20		2.85
12		15.0	230		(122)	3.10		2.80
13		14.9	230		<121	3.00		2.75
14		14.5	235		120	2.90		2.75
15		13.8	230		---	----		2.75
16		12.9	230		---	----		2.75
17		11.4	230					2.75
18		9.3	230					2.80
19		7.7	240					2.85
20		5.8	250					2.75
21		5.1	270					2.70
22		4.5	280					2.60
23		4.1	(310)					2.35

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 14

St. John's, Newfoundland (47.6°N, 52.7°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(7.0)	290					(2.50)
01		(6.9)	295					(2.40)
02		(6.5)	300					(2.50)
03		(6.4)	280					(2.50)
04		(5.9)	270					(2.50)
05		(5.7)	260					(2.60)
06		6.1	255		---	----		2.70
07		9.0	240		113	2.20		2.95
08		12.4	230		115	2.70		3.00
09		14.0	225		114	3.10		2.95
10		14.9	220		113	3.30		2.90
11		15.0	225		113	3.40		2.85
12		15.0	225		115	3.40		2.80
13		14.8	230		113	3.20		2.80
14		14.4	230		115	2.90		2.80
15		14.1	240		119	2.50		2.80
16		13.4	240		---	----		2.75
17		12.0	230					2.75
18		10.4	240					2.75
19		(9.2)	245					(2.70)
20		8.5	270					2.65
21		8.0	280					2.60
22		7.6	280					2.55
23		7.2	280					2.55

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 15

Ft. Monmouth, New Jersey (40.3°N, 74.1°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.0	260					2.75
01		(7.7)	260					(2.70)
02		(7.6)	260					(2.70)
03		(7.3)	260					(2.70)
04		(7.0)	(250)					(2.75)
05		(6.4)	(250)					(2.60)
06		6.4	<260					2.70
07		9.0	245		111	2.10		3.00
00		12.1	230		109	(2.75)		3.10
09		14.0	220		109	3.25		3.00
10		14.8	220		113	3.50		3.00
11		15.0	225		<113	3.70		2.80
12		14.6	220		113	3.70		2.75
13		14.4	225		113	3.60		2.70
14		14.0	230		111	3.40		2.70
15		13.8	230		111	3.00		2.75
16		13.2	235		112	2.40		2.75
17		12.4	240					2.80
18		11.4	240					2.75
19		10.0	240					2.80
20		9.4	245					2.75
21		8.9	250					2.70
22		8.5	<250					2.70
23		8.0	260					2.70

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

White Sands, New Mexico (32.3°N, 106.5°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.9	<275					2.70
01		5.4	<275					2.65
02		5.2	<285					2.60
03		5.0	<270					2.60
04		4.7	<295					2.45
05		4.6	<320					2.50
06		5.0	<290					2.60
07		8.9	250		(121)	2.30		3.00
00		12.0	240		111	3.00		3.05
09		13.6	230		111	3.40	3.5	2.90
10		14.0	230		109	3.70	4.0	2.80
11	---	13.9	225		109	3.90		2.70
12	---	13.9	230		(110)	4.00		2.55
13	---	13.6	230	---	111	3.90		2.55
14	---	13.4	235		113	3.70		2.50
15		13.0	240		115	3.30	3.5	2.50
16		12.6	240		117	2.70	2.9	2.60
17		12.2	245		---	----	2.0	2.65
18		11.1	240					2.65
19		9.8	245					2.70
20		8.8	(240)					2.75
21		7.8	250					2.75
22		6.9	(250)					2.70
23		6.3	(265)					2.70

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Okinawa I. (26.3°N, 127.8°E) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(13.5)	235					(2.80)
01		11.6	240					2.80
02		11.2	240					2.85
03		9.0	230					2.85
04		7.2	225					2.70
05		6.1	250					2.60
06		6.7	270					2.70
07		10.0	260		<152	2.20		2.95
08		13.2	240		115	2.90		3.00
09		14.6	240		112	3.40	3.5	2.95
10		15.0	235		115	3.70	3.9	2.80
11		15.1	230		112	3.95	4.1	2.65
12	(395)	15.6	230	---	111	4.00	4.1	2.55
13	400	16.0	230	(7.8)	112	4.00	4.2	2.50
14	395	15.8	230	7.2	113	3.90		2.50
15	400	15.7	235	6.8	113	3.65	3.7	2.45
16	---	15.4	245	---	113	3.20	3.2	2.50
17		15.0	255		120	(2.60)		2.55
18		14.8	265				3.0	2.60
19		(15.4)	285					2.60
20		17.3	275					2.65
21		17.1	250					2.70
22		(15.7)	235					(2.80)
23		(14.3)	230					(2.80)

Time: 135.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

Maui, Hawaii (20.8°N, 156.5°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.6	230					2.90
01		10.4	230					2.90
02		8.2	235					2.80
03		6.8	230					2.70
04		5.8	<260					2.50
05		5.3	300					2.45
06		6.2	315		---	E		2.50
07		9.9	280		133	2.20		2.85
00		13.5	250		115	3.00	3.2	2.95
09		15.4	240		113	3.60	3.8	2.85
10		15.8	235		111	3.90	4.0	2.70
11	(385)	16.0	230		110	(4.00)	4.2	2.60
12	405	16.1	230	---	109	(4.10)		2.50
13	415	16.0	235	7.4	109	(4.05)	4.2	2.40
14	420	15.8	230	7.2	(111)	4.00		2.40
15	390	15.5	240	---	111	(3.75)	4.0	2.45
16	(380)	14.9	240	---	117	3.30	3.8	2.50
17		14.2	250		(125)	2.45	3.5	2.55
18		13.9	270		---	----	3.8	2.60
19		13.6	270				3.6	2.65
20		14.1	270				2.8	2.70
21		14.8	250				2.1	2.80
22		14.0	240					2.80
23		12.6	235					2.90

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

Puerto Rico, W. I. (18.5°N, 67.2°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	245					2.85
01		7.4	240					2.85
02		6.6	235					2.85
03		5.4	235					2.70
04		5.2	<290					2.50
05		5.3	285					2.60
06		5.8	270					2.75
07		9.6	260		<130	2.40		3.00
00		12.6	240		111	3.05		3.00
09		13.8	235		109	3.55		2.90
10		13.9	230		109	3.85		2.80
11		13.5	230		109	(4.00)	4.2	2.65
12		13.0	225	---	109	(4.10)	4.4	2.60
13	---	12.8	230	(7.4)	109	(4.00)	4.4	2.50
14	---	12.4	230	(7.3)	109	3.90	4.2	2.45
15		11.9	230	---	111	3.75	3.8	2.40
16		11.5	240		111	3.30	3.4	2.45
17		11.6	250		<118	(2.60)	>2.7	2.50
18		11.4	270					2.60
19		10.6	260					2.60
20		10.3	280					2.60
21		10.0	270					2.70
22		9.4	250					2.70
23		9.0	245					2.80

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20

Baguio, P. I. (16.4°N, 120.6°E) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(11.2)	250					(2.65)
01		11.0	250					2.70
02		10.0	255					2.75
03		8.8	250				1.6	2.70
04		8.0	260					2.60
05		7.4	260					2.70
06		8.6	305		---	----		2.60
07		12.6	285		129	(2.80)		2.70
08		15.0	270		119	3.40		2.65
09		15.8	255		119	3.80		2.50
10	---	15.5	250		119	(4.00)	4.2	2.30
11	---	15.2	245		119	(4.10)	4.4	2.10
12	---	14.0	245	---	119	(4.10)		2.00
13	---	13.7	245	---	119	(4.00)	4.3	2.00
14	---	13.6	250	---	119	(3.85)	4.2	2.05
15	---	13.7	265		119	3.60	3.8	2.05
16		(13.7)	280		121	3.10		(2.05)
17		(13.8)	310		<143	2.20	3.4	(2.05)
18		(12.8)	365				3.0	(2.10)
19		>12.0	415				2.0	(2.05)
20		(12.1)	380				2.1	(2.20)
21		(12.5)	300					(2.40)
22		(12.5)	270					(2.50)
23		(12.0)	255					(2.55)

Time: 120.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 21

Panama Canal Zone (9.4°N, 79.9°W) November 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.0	230					2.80
01		8.7	230					2.80
02		7.0	220					2.65
03		5.9	245					2.55
04		5.1	<270					2.55
05		4.9	290					2.60
06		6.9	305		---	----		2.55
07		11.7	265		121	2.55		2.80
00		14.3	250		111	3.35		2.85
09		14.5	240		111	3.80		2.75
10		14.2	235		109	4.10	4.2	2.60
11	---	13.8	235		109	4.25	4.6	2.50
12	450	13.5	230	7.5	109	4.30	4.6	2.40
13	475	13.3	230	7.0	108	(4.20)	4.7	2.40
14	465	13.0	(235)	6.8	108	(4.00)	4.4	2.30
15	460	12.9	240	---	109	3.80	4.7	2.35
16	---	12.6	250		111	3.40	4.3	2.35
17		12.5	270		118	2.80	4.2	2.40
18		12.2	290				2.6	2.55
19		12.0	270				2.8	2.60
20		11.8	280					2.55
21		11.8	270					2.60
22		11.8	250					2.75
23		11.2	230					2.80

Time: 75.0°W.
Sweep: 1.0 to 25.0 Mc in 13.5 seconds.

Table 22

Godhavn, Greenland (69.3°N, 53.5°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.4)						(2.60)
01		(5.6)						(2.50)
02		(5.8)						----
03		(4.6)						(2.25)
04		(4.4)						----
05		(4.5)						----
06		(4.8)						----
07		(5.6)						----
00		(6.2)			---	----		----
09		7.6			124	(2.30)		2.70
10		9.1			119	2.50		2.75
11		9.8			119	(2.65)		2.65
12		(8.4)		---	117	2.80		(2.70)
13		(8.7)		---	119	2.70		(2.55)
14		(8.2)		---	<121	2.65		2.80
15		(8.0)			<125	2.50		2.70
16		8.3			121	2.30		2.65
17		7.4			---	----		2.65
18		(7.4)						2.55
19		(6.9)						2.50
20		6.7						2.40
21		7.2						2.45
22		(6.2)						(2.45)
23		(6.9)						----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 23

Kiruna, Sweden (67.8°N, 20.3°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	375				(4.1)	2.4
01		6.6	335				(3.5)	2.6
02		6.9	335				(4.0)	2.5
03		6.1	<325				(2.8)	2.5
04		6.0	295		---	---	2.6	2.55
05		5.5	280		---	---		2.6
06		6.2	270		---	1.7		2.7
07		7.8	260		---	1.9		2.7
00		9.4	255		---	2.3		2.8
09		10.8	250		115	2.6		2.8
10		11.5	245		115	2.8		2.75
11		12.5	240	---	115	2.9		2.7
12		12.7	240	---	115	2.9		2.7
13		13.0	240	---	115	2.8		2.7
14		12.9	240	---	120	2.5		2.8
15		12.0	245		120	2.4		2.8
16		11.2	245		---	2.0		2.8
17		9.2	250		---	1.6	2.0	2.8
18		7.0	260				2.5	2.7
19		6.1	290				(3.1)	2.8
20		6.2	310				(3.3)	2.6
21		6.6	340				(4.3)	2.5
22		6.0	340				(4.3)	2.5
23		7.0	<350				(4.3)	2.6

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 24

Narsarssuak, Greenland (61.2°N, 45.4°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.6)	360		---	----	4.0	(2.50)
01		(5.2)	375		---	----	3.3	(2.30)
02		(5.4)	395		---	----	3.2	(2.30)
03		(4.9)	420		---	----	2.9	2.40
04		(5.8)	370		---	----	3.2	(2.50)
05		(5.6)	350		---	----	3.4	(2.55)
06		(5.0)	340		---	----	3.2	2.60
07		7.0	300		121	2.50		2.75
00		8.7	270		120	2.45		2.80
09		10.0	255		119	2.05		2.75
10	---	11.1	240	---	115	3.00		2.70
11	---	11.3	240	---	111	3.10		2.65
12	---	11.7	240	---	111	3.10		2.65
13	---	12.5	245	---	113	3.00		2.60
14	---	11.5	250	---	117	2.90		2.65
15	---	10.4	255	---	121	2.65		2.70
16		9.8	280		121	2.40		2.70
17		(8.4)	290		125	2.00		2.70
18		(7.3)	320		---	----	2.6	(2.60)
19		(7.0)	340		---	----	4.0	(2.50)
20		(7.4)	345		---	----	4.8	(2.40)
21		(6.8)	345		---	----	4.6	(2.40)
22		(7.2)	340		---	----	4.2	----
23		(6.5)	350		---	----	3.7	----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 25

Nurmijarvi, Finland (60.5°N, 24.6°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(6.1)					<2.6	(2.60)
01		(5.4)					<2.4	(2.60)
02		(5.2)					<2.3	(2.50)
03		(5.5)					<2.3	(2.60)
04		(5.4)					<2.5	(2.60)
05		(5.1)					<1.9	(2.70)
06		(5.3)						(2.75)
07		6.0						2.80
08		8.9				---		2.90
09		11.2				---		2.90
10		12.3				---		2.90
11		12.2				---		2.80
12		12.5						2.75
13		12.5						2.75
14		12.6						2.75
15		13.0						2.75
16		12.9						2.80
17		12.6						2.80
18		11.5						2.80
19		10.2						2.80
20		8.8					<3.0	2.80
21		7.6					<2.8	2.65
22		6.4					<2.8	2.60
23		6.2					<2.7	2.45

Time: 30.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 26

Oslo, Norway (60.0°N, 11.1°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.5	350					2.40
01		5.4	350					2.40
02		4.9	345					2.35
03		4.6	320					2.40
04		4.3	305					2.40
05		4.3	290					2.40
06		4.8	265		---	----	2.1	2.55
07		6.7	255		---	2.00	2.1	2.70
08		9.4	250		125	2.35		2.80
09		11.4	250		115	2.80	3.1	2.80
10		13.1	240		115	3.05	3.2	2.80
11		13.6	240		110	3.20		2.70
12		13.9	240		110	3.25		2.70
13		13.8	240		110	3.25		2.70
14		14.0	240		110	3.10		2.70
15		13.2	245		115	2.80		2.70
16		13.0	250		120	2.40		2.75
17		12.5	250		110	2.00		2.80
18		11.4	250		---	----		2.80
19		9.5	240				1.8	2.70
20		8.4	250					2.70
21		7.4	290				1.6	2.50
22		6.4	305				1.5	2.40
23		6.0	350				3.0	2.40

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 27

Inverness, Scotland (57.4°N, 4.2°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.5	355				<1.3	2.65
01		5.4	355				<1.4	2.65
02		5.3	355				<1.4	2.65
03		(5.1)	340				<1.4	2.65
04		4.9	330				<1.4	2.75
05		4.9	300				<1.3	2.70
06		4.8	290		140	----	<1.4	2.80
07		6.8	265		145	2.00		3.10
08		9.1	250		115	2.55		3.20
09		11.2	240	---	110	2.90		3.15
10		12.6	240	---	110	3.10		3.10
11	405	13.4	235	---	110	3.30		3.05
12	375	13.4	235	---	110	3.40		3.00
13	400	13.2	235	---	110	3.40		3.00
14	365	13.0	240	---	105	3.20		2.95
15		13.0	245		110	2.95		3.00
16		12.7	250		110	2.55		3.05
17		12.1	250		120	2.10		3.10
18		11.1	240		145	----	<1.6	3.10
19		8.9	240				<1.6	3.05
20		(7.8)	255				<1.6	2.85
21		6.8	280				<1.6	2.70
22		6.6	300				<1.6	2.65
23		6.0	335				<1.4	2.65

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 28

Slough, England (51.5°N, 0.6°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.7	335				<1.3	2.35
01		6.4	325				2.5	2.30
02		5.9	320				2.4	2.30
03		5.8	320				1.2	2.30
04		5.5	295				<1.3	2.40
05		4.8	290				2.5	2.40
06		5.6	275		(190)	<1.50	2.8	2.55
07		8.6	250		140	2.30	3.2	2.75
08		11.2	240		125	2.85	3.2	2.75
09		>12.6	240	---	115	3.20	3.6	2.70
10		>13.7	240	---	115	3.45	3.9	(2.70)
11		>14.4	235	---	115	3.60	4.1	2.60
12		13.9	235	---	115	3.65	3.7	2.60
13		14.0	235	---	110	3.60	3.6	2.50
14		13.0	240	---	115	3.40	3.6	2.55
15		>13.4	245		115	3.10	3.4	2.55
16		>12.8	250		120	2.70		(2.60)
17		(12.1)	250		135	<2.10	2.8	(2.60)
18		>9.4	250			<1.60	2.5	----
19		>9.4	245				2.5	2.65
20		8.7	255				<1.6	2.50
21		8.1	280				<1.6	2.50
22		7.4	290				<1.6	2.40
23		7.2	310				<1.6	2.35

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 29

Victoria, Canada (48.4°N, 123.4°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	300					
01		5.0	300					
02		5.0	320					
03		5.0	320					
04		5.0	320					
05		4.9	300					
06		5.0	300					
07		7.8	250		105	2.3		
08		10.1	230		100	2.9		
09		11.4	220		100	3.3		
10		12.7	220		100	3.5		
11		13.0	220		100	3.7		
12	---	13.4	230	---	100	3.8		
13	---	13.4	220	---	105	3.8		
14	---	13.2	220	---	100	3.6		
15	---	13.0	230	---	100	3.3		
16		12.5	240		100	2.8		
17		12.0	230		---	2.3		
18		11.2	230		---	---		
19		9.7	240					
20		8.6	240					
21		7.3	240					
22		6.1	260					
23		5.6	280					

Time: 120.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 30

Ottawa, Canada (45.4°N, 75.9°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		6.6	290				<1.6	2.6
01		6.6	300				<1.6	2.5
02		6.2	300				<1.6	2.5
03		5.8	300				<1.6	2.55
04		5.6	300				<1.6	2.6
05		5.2	280				<1.6	2.6
06		6.0	280		---	1.7		2.75
07		9.0	250		120	2.3		2.9
08	(280)	11.5	240		110	3.0		2.9
09	(260)	(12.4)	230		110	3.3		2.9
10	(270)	(12.8)	230		105	3.6		2.9
11	(280)	(12.9)	230		110	3.8		(2.7)
12	(300)	(12.8)	230		105	3.8		(2.7)
13	(300)	(12.8)	240		110	3.8		(2.6)
14	(300)	(12.7)	240		110	3.6		(2.65)
15	(300)	(12.2)	240		110	3.3		(2.6)
16	(300)	(12.0)	250		115	2.8		---
17		(12.0)	260		130	2.1		---
18		(11.2)	250		---	---	<1.8	---
19		9.8	260				<1.7	---
20		9.0	270				<1.7	---
21		8.0	270				<1.7	(2.7)
22		7.4	280				<1.7	(2.7)
23		7.2	290				<1.6	2.6

Time: 75.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 16 seconds to October 21st.
1.6 Mc to 20.0 Mc in 15 seconds to October 31st.

Table 31

Wakkanai, Japan (45.4°N, 141.7°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.0	305				2.5	2.45
01		6.8	305				2.5	2.45
02		6.6	305					2.40
03		6.5	300					2.45
04		6.1	300					2.45
05		6.2	290					2.50
06		8.5	250			2.00		2.85
07		11.9	240			2.70	3.5	2.95
08		13.0	235			3.20	3.5	3.05
09		13.3	235			3.50	4.1	3.05
10	---	13.2	235	---		3.55	4.5	2.90
11	---	13.0	235	---		3.55	4.5	2.90
12	---	12.8	240	---		3.60		2.80
13		12.7	240			3.50		2.65
14		12.5	245			3.40		2.65
15		12.2	250			3.00	3.4	2.70
16		12.0	250			2.40	3.0	2.65
17		11.3	250			----	3.8	2.65
18		10.0	250				3.4	2.65
19		9.0	260				3.5	2.65
20		8.2	270				3.5	2.70
21		7.6	270					2.65
22		7.3	280					2.60
23		7.0	290					2.50

Time: 135.0°E.
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 32

Akita, Japan (39.7°N, 140.1°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.2	295				2.0	2.60
01		7.0	295				2.0	2.60
02		6.8	295				2.1	2.50
03		6.6	290				2.0	2.55
04		6.2	290				2.0	2.50
05		6.3	290				2.1	2.55
06		8.9	250			1.95	2.2	2.85
07		12.0	240			2.70		3.00
08	---	13.4	240			3.30		3.00
09	---	13.8	240			3.55	4.0	2.85
10	(250)	14.2	240			3.70	4.0	2.75
11	(245)	13.6	240	---		3.80		2.65
12	---	13.1	240	---		3.90		2.60
13	---	13.0	245			3.75		2.60
14		12.5	245			3.50	3.5	2.60
15		12.1	250			3.20	3.5	2.60
16		11.9	250			2.50	3.8	2.60
17		11.4	255			----	3.5	2.70
18		10.1	260				3.5	2.70
19		9.1	255				3.2	2.70
20		8.5	270				3.0	2.70
21		8.1	280				3.0	2.65
22		7.6	290				2.5	2.60
23		7.4	290				2.0	2.65

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 33

Tokyo, Japan (35.7°N, 139.5°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.9	295					2.60
01		7.7	300					2.60
02		7.1	300					2.60
03		6.8	290					2.50
04		6.4	300					2.45
05		6.3	300					2.50
06		9.0	265			E		2.85
07		12.3	250			2.75		2.95
08		13.5	250			3.35		2.85
09	---	14.0	250			3.70		2.75
10	---	14.4	250			3.90	4.0	2.60
11	---	14.0	250			(4.00)		2.50
12	---	13.8	250			(4.00)		2.45
13	---	13.6	250	---		3.90		2.45
14		13.2	250			3.70	3.7	2.40
15		12.4	255			3.30	3.8	2.45
16		12.2	265			2.70	3.6	2.50
17		11.8	270			E	3.0	2.60
18		10.8	275				3.2	2.60
19		9.8	295				2.4	2.55
20		9.6	300				2.9	2.55
21		9.2	295					2.60
22		8.5	300					2.55
23		8.2	300				2.1	2.55

Time: 135.0°E.
Sweep: 2.0 Mc to 20.0 Mc in 20 seconds.

Table 34

Yamagawa, Japan (31.2°N, 130.6°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		10.0	245				3.1	2.90
01		(9.5)	240				2.6	(2.80)
02		8.6	250				1.4	2.85
03		7.4	240				2.2	2.80
04		6.8	245				2.3	2.80
05		6.2	250				2.5	2.70
06		6.9	265				(2.4)	2.75
07		10.9	230			2.30	2.9	3.20
08		13.0	220			3.15	3.3	3.10
09		14.5	220			3.65	3.9	2.95
10		14.6	220			3.90	4.1	2.80
11		14.6	215			4.10		2.70
12		14.8	220			4.10	4.3	2.65
13		14.6	225			4.10	4.3	2.60
14		14.4	225			3.95		2.60
15		14.3	230			(3.65)	4.2	2.55
16		13.5	240			3.20	4.2	2.60
17		13.2	250			2.50	3.6	2.70
18		13.0	250				3.4	2.75
19		11.9	250				3.6	2.70
20		11.8	255				3.2	2.70
21		(11.9)	250				3.4	(2.75)
22		(11.5)	250				3.2	(2.75)
23		(10.8)	250				3.1	(2.85)

Time: 135.0°E.
Sweep: 1.0 Mc to 20.0 Mc in 1 minute.

Table 35

Singapore, British Malaya (1.3°N, 103.8°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.4	270		100	----	<1.2	2.30
01		12.0	280		130	----	<1.2	2.55
02		11.5	255		130	----	<1.1	2.65
03		10.9	250		100	----	<1.0	2.70
04		9.9	245		115	----	<1.0	2.80
05		8.5	240		130	1.20		2.90
06		8.5	280		140	2.10		2.75
07		11.2	255		125	3.10	3.1	2.70
08		12.2	245		120	3.70	3.9	2.40
09		13.2	240		115	4.10	4.3	2.10
10		13.8	235		115	4.40	4.4	1.95
11		13.8	225	---	115	(4.55)		1.85
12	600	13.5	225	---	115	(4.50)	4.9	1.80
13	550	13.4	<235	---	110	4.45	<4.7	1.80
14	570	13.6	<240	---	110	4.20		1.80
15	560	13.8	245	---	110	3.90	4.1	1.85
16		13.9	255		115	3.50	3.6	1.90
17		>13.6	285		120	2.80	3.0	1.90
18		>13.4	335		150	1.60	3.1	1.85
19		(13.2)	440		---	----	<1.3	1.80
20		>13.2	410		140	----	2.2	----
21		>13.0	350		130	1.25	1.7	----
22		13.4	290		110		2.2	(2.20)
23		>12.6	255		---		<1.2	2.30

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 36

Chiclayo, Peru (6.8°S, 79.8°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.0	260				5.0	(2.65)
01		9.7	260				4.7	2.80
02		9.2	250				4.8	2.80
03		8.6	240				4.0	2.85
04		7.6	240				3.0	2.90
05		6.2	245				3.6	3.00
06		7.5	285					2.70
07		>11.6	260		121	3.00	3.3	2.80
08		14.0	245		119	3.60		2.65
09		14.7	235		<116	4.05		2.50
10	---	15.0	225		113	4.30		2.20
11	---	>15.0	220		112	4.45		2.10
12	---	14.5	220		113	4.50		2.00
13	---	14.0	(220)	---	111	4.50		2.00
14	---	13.0	220	---	111	4.25		2.00
15	---	12.6	230		111	(3.95)	4.3	1.90
16		>12.5	245		111	3.50		1.95
17		>12.2	270		116	3.00	3.9	1.95
18		>11.5	315		---	----	4.8	(2.05)
19		11.3	400				3.8	(2.05)
20		>10.5	450					----
21		>10.8	400					(2.30)
22		10.6	320				2.0	----
23		(11.5)	<285				4.5	(2.60)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 37

Huancayo, Peru (12.0°S, 75.3°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.9	255				4.4	2.70
01		8.6	250				4.6	2.75
02		8.4	250				4.2	2.80
03		8.2	240				4.0	2.90
04		7.6	235				4.0	3.05
05		6.4	240				4.5	3.00
06		9.2	275		133	2.20	4.8	2.85
07		12.6	250		119	3.20	5.0	2.85
08		14.2	240		111	3.70	9.0	2.65
09		15.0	230		110	(4.15)	11.0	2.45
10	---	15.0	225		109	(4.45)	11.5	2.20
11	---	14.1	220		109	(4.45)	12.0	2.05
12	---	12.8	215		109	----	11.8	2.10
13	---	12.3	215	---	109	----	11.8	2.05
14		11.7	215		109	(4.15)	12.0	2.05
15		11.8	220		109	----	11.0	2.00
16		11.5	250		109	(3.50)	9.0	2.00
17		>11.2	275		111	(2.90)	7.4	2.00
18		10.8	330		---	1.70	4.6	2.05
19		>9.2	450		---	E		1.95
20		>9.1	(455)				(2.6)	2.00
21		8.9	(405)				4.2	2.10
22		8.9	335				3.4	2.25
23		9.0	280				4.4	2.55

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 38

Townsville, Australia (19.3°S, 146.7°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>8.5	280				1.9	----
01		>8.0	270					----
02		>7.5	300					----
03		>8.0	310					(2.50)
04		>8.0	310					(2.60)
05		>8.0	300		---	----	1.6	(2.60)
06		>8.4	270		120	2.10		----
07		>11.0	250		100	3.00	3.3	----
00	---	12.8	240	---	100	3.50	4.0	2.75
09	---	13.0	230	6.0	100	3.80	4.6	2.65
10	(435)	13.1	220	7.2	100	4.00	4.7	2.55
11	430	13.5	220	7.2	100	4.15	4.9	2.55
12	430	13.4	225	7.2	100	4.20	4.7	2.40
13	450	13.0	225	7.0	110	4.20	4.8	2.50
14	440	13.0	240	7.0	110	4.10	4.6	2.40
15	450	12.2	250	6.6	110	3.85	4.6	2.40
16	---	(12.0)	250	---	110	3.65	4.5	(2.40)
17		>11.0	250		110	3.00	4.0	----
18		>10.0	290		120	(2.00)	3.6	----
19		>10.0	300				3.2	
20		----	310				3.1	
21		----	310				2.8	
22		>8.5	300				2.2	
23		>9.5	300				2.1	

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 39

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.5	275				<2.0	2.60
01		6.6	275				<1.8	2.65
02		6.2	<275				<1.8	2.55
03		5.8	<290				<1.6	2.55
04		5.6	<300				<1.9	2.50
05		5.6	<320			<1.6	<1.6	2.50
06		8.8	250			2.4		2.90
07	---	10.9	240			3.2		2.90
08	---	12.1	235			3.7		2.75
09	---	12.4	230	---		4.0		2.60
10	(400)	12.7	220	---		---	4.6	2.50
11	425	12.8	(215)	7.6		---	4.7	2.45
12	430	12.9	---	7.0		---	4.9	2.40
13	440	12.7	(220)	7.2		---	4.8	2.35
14	440	12.4	230	---		---	4.5	2.35
15	410	12.2	230	6.6		4.0	4.3	2.35
16	(400)	11.9	245	---		3.6	4.0	2.40
17		11.6	250			3.0	3.6	2.45
18		11.7	270			---	2.6	2.55
19		11.2	265				<2.2	2.60
20		10.6	260				<2.0	2.65
21		10.0	265				<2.1	2.70
22		9.0	265				<2.0	2.70
23		8.2	270				<2.0	2.70

Time: 30.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 40

Brisbane, Australia (27.5°S, 152.9°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	290					2.40
01		8.0	280					2.40
02		7.5	300					2.40
03		7.5	320					2.35
04		7.5	320		---	----		2.40
05		8.0	310		---	E		2.50
06	---	9.7	250	---	120	2.70		2.80
07	---	11.4	240	---	120	>3.30		2.80
08	(500)	12.0	240	5.8	120	>3.60	4.0	2.70
09	(520)	12.0	230	---	---	----		2.60
10	(500)	12.2	230	---	---	----		2.50
11	420	12.2	230	6.9	---	----		2.45
12	420	12.1	240	7.2	---	----		2.45
13	440	11.9	230	6.9	---	----		2.45
14	(420)	11.6	250	6.6	---	----		2.40
15	(390)	11.1	250	---	120	(3.80)		2.45
16		10.7	250		120	3.50		2.45
17		10.3	260		130	2.70	3.2	2.50
18		9.9	270		---	E	1.9	2.60
19		9.5	290		---	----	1.8	2.55
20		9.4	300					2.60
21		9.4	300					2.55
22		9.0	290					2.55
23		8.9	290					2.50

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 41

Watheroo, W. Australia (30.3°S, 115.9°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>6.8	280				2.0	2.80
01		6.6	280				1.6	2.80
02		6.5	<300					2.75
03		6.4	<300					2.70
04		6.0	<300					2.70
05		6.0	310		---	----		2.70
06		>7.2	270		115	2.15		<3.05
07		8.3	250		105	3.00		<3.10
08	---	9.3	240	---	105	3.55		2.90
09	(490)	>9.9	240	5.9	100	3.90		<2.90
10	475	10.2	<250	6.3	100	3.90		2.75
11	460	10.3	<240	7.0	100	>3.70		2.65
12	435	10.8	<250	7.0	100	3.75		2.65
13	450	11.2	<250	7.0	105	3.60		2.70
14	450	10.4	<250	7.0	105	3.90		2.65
15	450	10.0	<250	6.7	105	4.00		2.65
16	430	9.6	<250	6.3	110	3.55		2.65
17	---	9.5	250	---	110	3.00		2.80
18		(8.0)	260		110	2.20		(2.90)
19		>7.0	260		---	----		(2.85)
20		>7.2	260					(2.75)
21		>7.0	260					(2.80)
22		>7.0	270					(2.75)
23		>7.0	275				1.2	<2.80

Time: 120.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 45 seconds.

Table 42

Capetown, Union of S. Africa (34.1°S, 18.3°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.8	<280				<1.7	2.60
01		6.2	<300				<1.7	2.50
02		5.9	(295)				<1.5	2.50
03		5.7	<300				<1.5	2.50
04		5.2	<310				<1.4	2.45
05		5.1	<340				<1.5	2.40
06		6.2	300			1.7		2.60
07		9.3	250			2.7		2.90
00		11.0	250			3.3		2.80
09		12.0	240			3.7		2.65
10	---	12.6	235			---		2.55
11	(430)	12.8	(230)	---		---	4.4	2.45
12	440	12.9	---	---		---	(4.5)	2.40
13	450	12.9	---	7.1		---	4.6	2.35
14	445	12.8	(220)	6.9		---	4.4	2.35
15	450	12.5	240	6.9		---		2.35
16	430	12.2	245	6.8		3.8		2.35
17	---	11.7	250	---		3.4	3.6	2.40
18		11.6	265			2.7	2.9	2.50
19		11.4	270			<1.9	2.5	2.55
20		10.4	255				1.8	2.60
21		9.2	250				1.9	2.65
22		8.6	260				<1.8	2.65
23		7.5	270				<1.8	2.65

Time: 30.0°E.
Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 43

Canberra, Australia (35.3°S, 149.0°E) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.6	290				2.6	2.40
01		7.4	300					2.40
02		7.2	<300					2.40
03		7.0	310					2.35
04		6.9	315					2.35
05		7.0	320		140	1.50		2.50
06		8.0	265		125	2.50		2.70
07	---	8.3	245	---	115	3.20	3.4	2.60
08	(520)	9.2	240	5.8	110	3.70	3.9	2.50
09	530	>9.6	230	6.0	110	4.00	4.3	2.50
10	(465)	10.6	230	(7.0)	105	4.10	4.4	2.45
11	475	10.8	230	7.0	105	4.20	4.3	2.45
12	450	11.2	(230)	7.1	110	4.15		2.40
13	460	10.4	230	6.6	110	4.10		2.35
14	470	10.6	240	(6.6)	110	4.05		2.35
15	480	10.1	235	(6.4)	110	3.90		2.40
16	(470)	10.0	240	6.0	110	3.55		2.40
17	---	9.8	260		120	3.00		2.50
18		9.6	280		135	2.10		2.50
19		>9.4	280					2.50
20		>8.8	290					2.45
21		>9.0	300					2.40
22		8.6	310				2.2	2.45
23		>8.0	300				2.6	2.40

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 44

Falkland Is. (51.7°S, 57.8°W) October 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.4	345				2.0	2.25
01		9.3	335				1.4	2.30
02		9.0	320				1.7	2.20
03		8.5	340					2.20
04		8.3	350		---	1.60		2.15
05		9.2	275		170	2.00		2.20
06		10.7	245		120	2.50		2.70
07		11.9	240		110	3.10		2.55
00		13.0	240		110	3.60	3.9	2.55
09		13.8	235		105	3.80	4.4	2.50
10		14.2	235		105	3.95	4.8	2.35
11		14.0	240		105	4.00	5.6	2.35
12		13.9	235		105	3.90	5.0	2.35
13		13.7	240		105	3.90	4.7	2.35
14		13.1	240		105	3.85	4.4	2.40
15		12.4	250		105	3.70	3.9	2.40
16		11.7	250		110	3.20		2.50
17		11.4	250		115	2.75	3.1	2.55
18		11.0	270		135	2.10	3.1	2.65
19		10.2	275			----	3.5	2.55
20		9.4	290				3.1	2.35
21		9.2	305				2.3	2.25
22		9.3	330				2.2	2.20
23		9.2	340				2.6	2.20

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 45

Lulea, Sweden (65.6°N, 22.1°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>5.5	---				3.8	
01		>4.8	(340)				3.0	
02		>4.5	(300)				<2.2	
03		>4.2	(300)				<1.7	
04		>4.2	(290)					
05		>5.2	(270)		---	---	<2.2	
06		(7.0)	(260)	---	---	2.5		---
07		>7.5	(250)	---	---	2.9		---
00	---	>8.0	245	---	---	3.2	<3.6	---
09	---	>8.0	(230)	---	---	3.4	<3.6	---
10	---	>8.0	(240)	---	---	3.5	<3.6	---
11	---	>8.0	(240)	---	---	---	<3.7	---
12	---	>8.5	(230)	---	---	---	<3.6	---
13	---	7.8	(225)	4.6	110	3.5		---
14	---	>7.2	---	---	---	---	<3.6	---
15	---	>7.2	---	---	---	---	<3.1	---
16	---	>8.0	(245)	---	---	3.0		---
17	---	>8.0	(255)	---	---	2.7	<3.2	
18		>7.8	(250)		---	---	(2.8)	
19		>7.0	---		---	---	(3.4)	
20		>6.0	(270)				3.1	
21		>6.0	(280)				3.8	
22		>6.0	---				<2.0	
23		>5.6	(280)				3.4	

Time: 15.0°E.
Sweep: 1.5 Mc to 10.0 Mc in 9 minutes, automatic operation.

Table 46

Churchill, Canada (58.8°N, 94.2°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.2	310		---	1.6	4.4	
01		4.6	320		125	1.4	4.2	
02		5.2	300		---	1.4	4.4	
03		5.0	310		---	1.6	4.0	---
04		4.9	340		130	2.0	4.0	---
05		4.5	320		120	2.2	4.0	
06	---	5.0	330	---	120	2.6	3.5	
07	---	6.0	300	---	115	3.2		---
08	(690)	6.4	280	4.1	110	3.2	4.2	2.8
09	490	6.8	250	4.7	110	3.4	4.0	2.7
10	410	7.1	240	5.0	110	3.5		2.65
11	390	7.6	240	5.2	110	3.5		2.65
12	450	8.2	240	5.2	110	3.6		2.5
13	390	8.8	230	5.2	110	3.5		2.6
14	380	9.0	230	5.0	110	3.5		2.55
15	(360)	9.8	240	4.9	110	3.3		(2.5)
16	420	9.3	250	4.5	110	3.1		2.55
17	(340)	9.1	260	4.3	120	2.9	<3.0	2.6
18		8.2	280		120	2.6		(2.65)
19		6.5	300		120	2.5	3.0	---
20		6.5	310		130	2.3	3.8	---
21		6.1	300		130	1.7	5.2	---
22		5.4	280		---	1.8	6.0	
23		5.5	320		---	(1.6)	5.2	---

Time: 90.0°W.
Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 47

Chiclayo, Peru (6.8°S, 79.8°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.9	230					(2.80)
01		9.0	235					2.80
02		9.0	240					2.90
03		7.7	245					2.95
04		6.9	230					(3.05)
05		6.6	250					2.90
06		6.6	265		---	----		2.75
07		9.8	255		<123	2.70		2.90
00		11.6	240		119	3.40		2.80
09		13.0	(230)		119	3.95		2.50
10		>13.1	<225		118	4.15		2.45
11		>13.0	<225	---	115	4.40		2.30
12	---	(13.0)	215	---	(115)	4.40		(2.15)
13	---	>12.2	<220	---	111	4.35		2.10
14		(12.5)	<220		109	----		2.05
15		>11.8	<230		111	(3.90)		2.00
16		>11.4	<240		114	(3.50)		2.05
17		>11.0	260		115	3.05		2.10
18		>10.5	290		---	----		(2.10)
19		>10.0	395					2.10
20		>9.4	400					(2.20)
21		(11.2)	370					----
22		>10.2	285					(2.65)
23		(9.0)	240					(2.80)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 48

Huancayo, Peru (12.0°S, 75.3°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.1	230					2.80
01		7.6	230					2.90
02		7.4	<240					2.95
03		6.9	<245					3.00
04		6.4	245					3.05
05		5.8	240				3.0	3.10
06		>7.2	270		---	----	4.8	2.90
07		10.6	250		119	3.00	5.0	2.95
00		12.8	235		111	3.55	8.0	2.80
09		13.9	225		109	4.00	9.1	2.60
10		>14.0	<220		109	4.15	10.0	2.35
11		>13.6	215		109	----	10.3	2.20
12		>13.0	215	---	109	4.30	10.8	2.10
13	---	>12.0	210	---	107	----	10.1	2.05
14		11.6	215		109	----	10.0	2.05
15		11.5	225		109	3.90	9.3	2.05
16		11.2	240		109	3.50	9.0	2.10
17		10.9	265		111	2.80	7.4	2.10
18		9.8	310		---	1.70	4.4	2.15
19		8.8	460					2.00
20		(8.7)	(420)					(2.15)
21		(9.0)	345					(2.45)
22		(9.0)	260					(2.70)
23		8.3	240					2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 49

Townsville, Australia (19.3°S, 146.7°E) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		>7.8	250					(3.00)
01		>7.4	240					(3.00)
02		6.9	240					2.80
03		6.2	260					2.80
04		>6.0	290					2.60
05		5.8	300				1.8	2.65
06		>7.5	295		150	1.80		(2.80)
07		>9.2	250		100	2.70		----
08	(260)	13.2	240	---	100	3.30		3.05
09	---	13.3	230	---	100	3.75		3.00
10	(260)	13.2	220	---	100	3.90	4.1	2.90
11	290	13.2	210	---	100	4.10	4.4	2.80
12	---	13.0	210	---	100	4.10	4.6	2.70
13	(360)	12.4	210	6.8	100	4.00	4.3	2.65
14	(400)	>12.0	210	6.5	110	3.85		2.60
15	(390)	11.9	240	6.5	110	3.70		2.60
16		>11.0	240	---	110	3.50		2.60
17		>11.4	250		100	<3.00		----
18		>8.4	270		110	2.00		----
19		>8.4	270		---	----		
20		>7.9	270					----
21		>7.5	270					
22		>7.5	270					----
23		>7.5	250					----

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 50

Falkland Is. (51.7°S, 57.8°W) September 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		6.5	340					2.30
01		6.3	345					2.30
02		6.2	320					2.35
03		5.9	300					2.50
04		5.7	300					2.40
05		5.8	295			---		2.45
06		7.4	250		155	1.9		2.90
07		9.4	235		120	2.3		3.00
08		11.1	230		115	3.0	3.2	3.00
09		11.9	240		110	3.4	3.8	2.90
10		12.9	235		110	3.5	4.2	2.90
11		13.2	235		110	3.7	4.2	2.75
12		13.0	235		110	3.7	4.3	2.70
13		12.8	235		105	3.6	4.6	2.70
14		11.7	240		110	3.6	3.9	2.80
15		11.0	245		105	3.3	3.4	2.80
16		10.4	250		110	3.0	3.0	2.80
17		9.9	250		120	2.3	2.8	2.90
18		9.4	250			---	3.1	2.90
19		7.9	245				2.1	2.75
20		7.0	250				<1.6	2.55
21		6.8	265				<1.4	2.50
22		>6.9	295				<1.6	2.50
23		6.7	300				<1.4	2.45

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 51

Meanook, Canada (54.6°N, 113.3°W) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.0	270					----
01		4.7	310					----
02		4.4	300					
03		4.2	310					
04	---	4.2	300	---				
05	---	4.3	290	---	---	---		----
06	---	5.0	250	---	100	2.3		----
07	440	5.7	230	4.3	100	2.8		(2.85)
08	410	6.1	220	4.6	100	3.1		2.7
09	450	6.4	200	4.8	100	3.4		2.7
10	430	6.6	200	5.0	100	3.6		(2.6)
11	440	6.9	200	5.2	100	3.8		(2.6)
12	440	7.0	200	5.1	100	3.8		(2.6)
13	430	6.8	200	5.3	100	3.9		2.55
14	440	6.9	200	5.3	100	3.8		2.5
15	450	7.0	200	5.1	100	3.7		(2.6)
16	400	6.9	200	5.0	100	3.4		(2.7)
17	400	6.9	220	4.9	100	3.2		2.7
18	(360)	6.8	230	4.5	100	2.8		2.7
19	---	6.7	250	---	100	2.5		2.8
20		6.3	250	---	100	2.0		----
21		5.9	260	---	---	---		----
22		5.8	260					----
23		5.2	280					----

Time: 105.0°W.
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 52

Tortosa, Spain (40.8°N, 0.5°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		7.7	310				2.6	2.60
01		7.5	300				2.4	2.60
02		7.1	290				2.2	2.65
03		6.5	<300				2.2	2.65
04		6.2	280				2.5	2.70
05		6.1	280		120	1.6	2.2	2.80
06	---	7.1	245	---	115	2.3	2.8	3.10
07	(275)	8.2	235	4.5	110	2.9	3.7	3.10
08	295	8.2	225	5.0	100	3.3	4.2	3.10
09	310	8.8	215	5.3	100	3.5	4.4	2.95
10	330	9.0	205	5.9	100	3.7	4.8	2.80
11	345	9.2	215	6.2	100	3.8	4.6	2.70
12	360	>9.4	215	6.1	100	3.9	4.3	2.70
13	350	9.6	215	6.0	100	3.8	4.5	2.80
14	350	>9.5	220	5.9	100	3.8	4.0	2.75
15	340	>9.0	225	5.7	100	3.7	4.0	2.80
16	345	>9.0	235	5.5	100	>3.3	4.0	2.80
17	305	9.0	240	4.9	<110	3.0	3.7	2.85
18	---	9.0	260		115	2.3	2.8	2.90
19		>9.0	260		---	---	2.4	(2.90)
20		8.6	250				2.4	2.80
21		8.3	270				2.3	2.65
22		(7.8)	280				2.4	(2.65)
23		7.6	290				2.4	2.60

Time: Local.

Table 53

Singapore, British Malaya (1.3°N, 103.8°E) August 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.7	230				3.0	2.90
01		9.4	220				<1.9	2.95
02		8.7	235				1.7	2.90
03		7.2	235				<1.6	3.00
04		6.6	240				1.4	3.00
05		5.1	240				2.6	3.15
06		5.9	290		110	----	3.0	2.90
07		10.0	255		130	2.75	3.4	2.85
08		12.8	240		110	3.40	3.9	2.65
09		13.8	225		110	3.80	5.6	2.50
10		14.1	210		110	4.10	4.8	2.30
11		14.1	205		110	4.25		2.10
12		13.8	205		110	4.30		1.90
13		12.6	200		110	4.25		2.00
14		12.5	200		110	4.10		1.90
15		12.5	210		110	3.85		2.00
16		12.5	220		110	3.50		2.05
17		>12.7	250		115	2.80		2.15
18		12.6	280		120	1.80	2.2	2.20
19		12.8	345			----	<1.4	2.20
20		(13.8)	350				<1.3	(2.40)
21		(12.8)	260				<1.3	(2.45)
22		>12.9	240				1.7	(2.70)
23		12.2	225				2.8	2.70

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 54

Ibadan, Nigeria (7.4°N, 3.9°E) July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.2)	410					(2.30)
01		(5.2)	400					(2.30)
02		(4.6)	350					(2.46)
03		(4.6)	300					(2.50)
04		(4.6)	250					(2.85)
05		(3.8)	245					(3.08)
06		7.8	265		120	2.20	2.9	3.04
07		10.9	245		115	3.10	3.3	3.04
08		12.5	235		110	3.60	7.0	2.80
09		13.0	225		105	3.95	6.6	2.60
10		12.8	220	(5.4)	(105)	4.15	7.7	2.30
11		12.4	210	(5.4)	(105)	4.25	9.0	2.18
12		11.0	205	(5.5)	(105)	4.30	10.4	2.10
13		10.7	210	(5.4)	(105)	4.25	10.4	2.06
14		10.3	205	(5.2)	105	4.05	10.2	2.10
15		10.6	215	---	110	3.80	7.6	2.10
16		10.4	230	---	110	3.40	7.2	2.15
17		10.5	250		110	2.80	4.8	2.18
18		10.3	295		115	1.85		2.25
19		(8.8)	385		---	----		(2.10)
20		(7.0)	450					(2.09)
21		(6.5)	460					(2.09)
22		(6.1)	480					(2.17)
23		(5.9)	450				1.0	(2.29)

Time: 0.0°.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 55

Singapore, British Malaya (1.3°N, 103.8°E) — July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		11.8	240				3.4	2.90
01		10.7	235				3.4	2.90
02		9.0	235				3.0	3.00
03		7.4	230				1.4	2.95
04		6.6	235				<1.9	2.95
05		5.3	240				2.2	3.05
06		6.2	290			1.50	2.8	2.85
07		10.7	255		120	(2.70)	3.4	2.85
00		13.4	245		110	3.40	4.2	2.70
09		14.2	230		110	3.75	4.7	2.50
10		14.6	220		105	4.00	4.4	2.25
11		14.0	210		105	4.20		1.95
12		13.3	210		110	4.20		1.90
13		12.8	210		105	4.20		1.90
14		12.4	215		110	4.10		1.95
15		12.4	215		110	3.85		1.90
16		12.2	230		110	3.50		2.00
17		12.4	250		115	2.85	3.0	2.05
18		12.6	275		<135	2.00	3.0	2.15
19		12.7	310				3.3	2.20
20		13.0	350				1.4	2.25
21		13.0	250				1.8	2.40
22		12.7	250				3.1	2.60
23		12.7	240				4.0	2.70

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 56

Chiclayo, Peru (6.8°S, 79.8°W) — July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		9.2	230					2.90
01		9.2	230					2.90
02		8.8	230					3.00
03		8.2	230					3.10
04		6.6	225					3.20
05		5.4	235					3.20
06		4.6	240					3.00
07		7.3	260		123	2.30		2.90
08		9.4	240		113	3.05	5.0	2.80
09		9.8	225		109	3.50		2.50
10		10.0	220		111	3.85	5.1	2.30
11	---	10.3	210		112	4.00		2.20
12	---	10.2	210		111	4.10		2.15
13	---	10.0	205		111	(4.10)		2.15
14	---	10.5	210		107	(4.00)		2.15
15	---	10.2	<205	---	112	(3.85)		2.10
16		10.0	220		115	3.40		2.15
17		9.8	250		117	(3.00)		2.10
18		9.7	280		---	----		2.15
19		9.4	350					2.15
20		9.3	370					2.15
21		9.6	310					2.35
22		10.1	270					2.55
23		9.5	230					2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 57

Chimbote, Peru (9.1°S, 78.6°W) — July 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		8.5	240					2.90
01		8.4	230					2.95
02		8.1	230					3.05
03		7.2	230					3.15
04		6.0	225					3.10
05		4.8	240					3.10
06		4.1	250					3.00
07		7.4	265		133	2.25		2.95
08		9.4	240		119	3.00	5.9	2.75
09		10.0	230		115	3.50	7.0	2.55
10		10.1	220		114	3.90	7.9	2.40
11		10.0	215		114	4.05	8.0	2.25
12	---	10.0	210	---	113	(4.10)	8.0	2.25
13	---	10.0	210	---	113	4.05	7.6	2.20
14	---	10.0	210	---	115	3.95	8.0	2.15
15	---	10.0	210	---	113	3.80	6.9	2.15
16		9.8	225	---	114	3.35	5.8	2.20
17		9.6	255		121	2.80		2.15
18		9.2	290		---	----	4.0	2.20
19		8.8	360					2.15
20		8.6	350					2.25
21		8.8	305					2.45
22		8.8	250					2.65
23		8.6	235					2.80

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 58

Yakutsk, U.S.S.R. (62.0°N, 129.7°E) — June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	8.2			---	---		2.7
01	280	8.0						2.7
02	300	7.5						2.6
03	300	7.2	(300)	---	---	E		2.6
04	330	7.2	250	3.4	100	2.3		2.7
05	350	7.1	250	3.8	100	2.6		2.7
06	390	7.0	230	4.4	90	2.9		2.7
07	430	7.0	230	4.8	80	3.2		2.6
08	(350)	7.6	230	5.0	80	3.2		2.7
09			220		80	3.4		
10			220		80	3.5		
11			(230)		80	3.4		
12			(220)		80	3.5		
13			(220)		80	3.4		
14			230		80	3.6		
15		(7.6)	210		80	3.6		(2.7)
16		(7.6)	210		80	3.4		(2.7)
17		(7.7)	230		80	3.2		(2.7)
18	380	(7.1)	230	4.8	80	3.2		2.7
19	350	(7.2)	230	4.4	90	2.9		2.8
20	300	(7.5)	250	---	100	2.6		2.8
21	260	(7.6)			140	2.2		2.7
22	260	7.9			---	E		2.7
23	260	8.0			---	E		2.7

Time: 135.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 59

Leningrad, U.S.S.R. (59.9°N, 30.7°E) — June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	200	5.9						
01	290	6.1						
02	290	(5.8)						
03	290	(7.3)	240	2.9	---	E		
04	330	7.4	220	3.7	100	E		(2.6)
05	380	7.6	220	4.3	100	2.8		2.6
06	400	7.5	220	4.8	100	2.9		2.6
07	400	8.0	220	5.0	100	3.2		2.6
08	400	8.0	220	5.0	100	3.4		2.6
09	440	7.0	220	5.2	100	3.5		2.6
10	440	8.0	220	5.4	100	3.6		2.6
11	440	7.8	210	5.3	100	3.7		2.5
12	460	8.0	210	5.4	100	3.7		2.5
13	450	7.5	210	5.5	100	3.7		2.6
14	440	7.4	220	5.4	100	3.6		2.6
15	440	7.3	220	5.3	100	3.6		2.6
16	410	7.2	220	5.2	100	3.5		2.7
17	390	7.5	220	5.1	100	3.3		2.8
18	340	7.8	220	4.8	100	2.9		
19	300	7.6	240	4.2	100	2.8		
20	240	7.4			100	E		
21	240	(7.7)						
22	240	7.8						
23	250	7.4						

Time: 30.0°E.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 60

Sverdlovsk, U.S.S.R. (56.7°N, 61.1°E) — June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	7.0						2.5
01	320	6.9						2.5
02	330	6.5						2.5
03	340	6.2						2.5
04	320	6.8	---	---	150	2.1		2.5
05	370	7.4	280		130	2.5		2.4
06	390	7.5	270	4.6	120	3.0		2.5
07	440	7.6	250	5.0	120	3.3		2.4
08	460	7.4	250	5.2	120	3.5		2.4
09	480	7.4	240	5.4	120	3.7		2.4
10	480	7.7	240	5.5	110	3.8		2.4
11	490	7.6	240	5.6	110	3.8		2.4
12	400	8.0	240	5.7	110	3.9		2.4
13	480	7.6	240	5.7	110	3.9		2.4
14	480	7.6	250	5.5	120	3.8		2.4
15	440	7.6	240	5.4	120	3.7		2.4
16	420	7.4	250	5.2	120	3.5		2.5
17	390	7.2	250	4.9	120	3.3		2.5
18	340	7.2	270		120	3.0		2.6
19	280	7.0	---	---	130	2.6		2.6
20	300	6.9			150	2.1		2.6
21	300	6.9			---	---		2.6
22	320	7.2						2.6
23	310	7.2						2.6

Time: 60.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 10 minutes, manual operation.

Table 61

Tomsk, U.S.S.R. (56.5°N, 84.9°E) June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	7.2						2.6
01	300	7.0						2.5
02	300	6.8						2.6
03	300	6.4						2.6
04	300	6.5			---	E		2.5
05	350	6.8	270	(3.8)	120	2.2		2.5
06	370	7.0	250	4.5	110	2.7		2.6
07	410	7.0	240	4.8	110	3.0		2.5
08	420	7.2	240	5.0	100	3.3		2.5
09	450	7.2	240	5.2	100	3.5		2.5
10	460	7.3	230	5.5	100	3.7		2.4
11	460	7.4	220	5.6	100	3.8		2.4
12	460	7.5	220	5.6	100	3.8		2.4
13	460	7.3	220	5.6	100	3.8		2.4
14	460	7.4	220	5.6	100	3.7		2.5
15	440	7.4	230	5.5	100	3.6		2.5
16	430	7.4	240	5.3	100	3.5		2.5
17	400	7.3	240	5.0	100	3.2		2.6
18	350	7.2	240	(4.8)	100	3.0		2.7
19	300	7.1	250		110	2.7		2.6
20	270	7.1			120	2.1		2.6
21	280	7.1			---	E		2.6
22	280	7.2						2.6
23	280	7.4						2.6

Time: 90.0°E.
Sweep: 1.8 Mc to 16.0 Mc in 10 minutes, manual operation.

Table 62

Simferopol, U.S.S.R. (44.4°N, 34.0°E) June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.9						2.6
01	302	7.5						2.4
02	300	7.2						2.5
03	300	6.8						2.6
04	295	7.0	---	---	(100)	(1.8)		2.6
05	260	8.0	---	---	100	2.5		2.6
06	245	8.8	242	---	100	3.1		2.6
07	362	9.0	247	(5.3)	100	3.5		2.6
08	400	9.1	245	(5.8)	100	3.7		2.6
09	410	9.4	(227)	5.9	100	3.9		2.4
10	402	9.6	237	6.1	100	4.0		2.5
11	400	9.2	215	6.2	100	4.1		2.5
12	415	9.2	225	6.0	100	4.2		2.4
13	415	9.2	235	6.0	100	4.1		2.5
14	410	9.1	232	6.0	100	4.0		2.6
15	400	0.8	235	5.9	100	3.7		2.6
16	395	8.4	235	5.6	100	3.7		2.6
17	342	8.5	260	(5.3)	100	3.3		2.6
18	315	8.2	260	---	100	2.8		2.7
19	290	8.3			100	1.9		2.8
20	282	8.6			---	(1.1)		2.7
21	295	8.4				---		2.6
22	300	7.6				---		2.5
23	300	8.3						2.5

Time: 30.0°E.
Sweep: 0.5 Mc to 25.0 Mc in 12 seconds.

Table 63

Alma-Ata, U.S.S.R. (43.2°N, 76.9°E) June 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	7.7						2.6
01	300	7.4						2.6
02	300	7.1						2.6
03	300	6.8						2.6
04	300	6.9			100	1.5		2.6
05	280	7.7	(250)	(3.3)	100	2.2		2.6
06	280	8.6	230	4.4	100	2.9		2.6
07	300	9.2	230	5.1	100	3.5		2.6
08	340	9.6	230	5.7	100	4.2		2.7
09	340	10.0	230	6.1	100	4.6		2.7
10	360	10.2	230	6.1	100	4.6		2.6
11	380	10.5	230	6.2	100	4.7		2.6
12	380	10.4	230	6.2	100	4.7		2.6
13	380	10.2	230	6.0	100	4.6		2.6
14	380	9.8	230	5.9	100	4.5		2.6
15	350	9.4	230	5.7	100	4.4		2.7
16	340	9.2	220	5.6	100	4.1		2.7
17	320	9.0	240	5.1	100	3.6		2.7
18	300	8.8	240	4.7	100	3.0		2.0
19	270	8.6	(240)	(4.2)	100	2.4		2.8
20	260	8.4			100	1.7		2.7
21	280	8.2						2.6
22	300	8.1						2.6
23	300	7.9						2.6

Time: 75.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 15 minutes, manual operation.

Table 64

Singapore, British Malaya (1.3°N, 103.8°E) June 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.6	240				(3.1)	2.85
01		11.2	235				(2.7)	3.00
02		9.0	230				(2.6)	2.95
03		7.3	235				(2.0)	2.95
04		6.4	235				(2.0)	2.95
05		5.1	245				(2.1)	2.95
06		6.8	235			1.5		2.00
07		11.1	255		120	2.8	2.9	2.80
00		14.0	250		110	3.4	3.6	2.80
09		15.0	240		110	3.8	(4.8)	2.60
10		15.0	225		110	4.1	4.4	2.35
11		>14.6	215		110	4.2		2.15
12		13.6	210		110	4.3		2.05
13		12.8	215		110	4.2	4.4	1.90
14		12.6	215		110	4.1		1.90
15		12.5	225		110	3.8	(4.2)	1.90
16		12.4	240		115	3.4	(3.7)	2.05
17		12.5	255		115	2.8	(3.4)	2.15
18		12.8	280		145	1.7	(3.1)	2.25
19		13.2	310				(3.0)	2.35
20		13.3	310				(2.2)	2.45
21		13.2	260				(2.4)	2.55
22		12.7	250				(2.7)	2.60
23		13.0	245				(3.6)	2.70

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 65

Falkland Is. (51.7°S, 57.8°W) June 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.2					(1.9)	2.30
01		3.2						(2.35)
02		3.2						2.30
03		3.2						2.35
04		3.2						2.35
05		3.1						2.50
06		2.8						2.80
07		3.7						----
08		6.8					(2.2)	----
09		9.2					(3.0)	3.30
10		10.2					(3.6)	3.30
11		11.1					(3.5)	3.30
12		11.0					(4.1)	3.35
13		10.3					(4.4)	3.35
14		9.6					(3.2)	3.20
15		9.0					(2.8)	3.30
16		7.2					(2.9)	(3.20)
17		5.4						3.15
18		4.6						3.10
19		4.0						(3.25)
20		3.4						3.00
21		3.1					(1.8)	(2.85)
22		3.0						2.40
23		3.2						2.35

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 66

Irkutsk, U.S.S.R. (52.5°N, 104.0°E) May 1957

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.9						---
01	290	(6.6)						---
02	290	(6.6)						---
03	300	(6.6)						---
04	280	(6.4)						---
05	270	(7.6)			110	2.2		---
06	290	(8.2)	230	(4.4)	110	3.0		(2.8)
07	260	8.7	230	4.6	110	3.2		2.8
08	300	9.1	220	4.8	110	3.4		2.8
09	300	9.3	220	6.0	110	3.6		2.7
10	310	10.4	220	---	110	---		2.8
11	310	10.7	---	---	110	---		2.7
12	340	10.6	---	6.4	110	---		2.7
13	320	11.0	220	6.0	110	---		2.7
14	320	10.8	---	5.6	110	3.7		2.7
15	310	11.0	230	---	110	3.6		2.7
16	300	10.7	220	5.2	110	3.4		2.8
17	300	9.5	---	---	110	(3.0)		2.8
18	270	9.2	---	---	110	(2.7)		2.8
19	260	9.0	---			(2.2)		(3.0)
20	250	8.8						---
21	270	8.7						---
22	270	8.3						---
23	270	8.0						---

Time: 105.0°E.
Sweep: 1.8 Mc to 16.0 Mc in 1 minute.

Table 67

Singapore, British Malaya (1.3°N, 103.8°E) May 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		12.7	235				(1.0)	2.85
01		10.8	225				(1.2)	3.00
02		8.7	230				(1.0)	2.90
03		7.0	235				(1.9)	3.00
04		6.0	235				(1.4)	2.95
05		5.4	230				(2.2)	3.10
06		7.3	280		---	---	(2.0)	2.05
07		11.4	255		125	2.8	3.0	2.90
00		13.8	245		115	3.4	3.6	2.75
09		14.6	230		110	3.0	(4.2)	2.55
10		15.0	215		110	4.1		2.25
11		14.8	210		110	4.2		2.00
12		13.0	205		110	4.2		1.95
13		12.4	205		110	4.2		1.90
14		12.4	210		110	4.1		1.90
15		12.7	225		110	3.8	4.1	2.00
16		13.0	240		115	3.4		2.05
17		13.0	255		120	2.7		2.15
18		13.4	290		---	(1.5)	(2.5)	2.20
19		13.5	340				(2.4)	2.20
20		13.7	335				(0.9)	(2.30)
21		13.4	265				(1.8)	(2.50)
22		13.8	230				(3.4)	2.60
23		13.3	240				(2.4)	2.70

Time: 105.0°E.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 68

Falkland Is. (51.7°S, 57.8°W) May 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		3.9	330					2.3
01		3.8	330					2.4
02		3.8	340					2.3
03		3.7	340					2.3
04		3.5	330					2.3
05		3.3	305					2.5
06		3.2	280					2.5
07		>5.1	260		(175)	1.6		---
00		8.2	230		145	2.1	2.6	3.2
09		11.2	225		120	2.5	(3.3)	3.2
10		12.2	225		115	2.8	(3.4)	3.2
11		12.3	225		110	3.1	(3.8)	3.2
12		12.3	235		110	3.1	(3.4)	3.2
13		11.2	225		110	3.0	(3.9)	3.2
14		10.5	235		110	2.8	3.0	3.2
15		9.8	230		120	2.4	(3.3)	3.3
16		8.7	225		(145)	2.0	(3.4)	3.2
17		6.8	215				(3.1)	3.2
18		5.6	230				(2.6)	3.2
19		4.2	235				(2.6)	3.2
20		3.6	255					2.9
21		3.4	290					2.6
22		3.7	320				(2.0)	2.5
23		3.7	340					2.3

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 69

Falkland Is. (51.7°S, 57.8°W) April 1957

Time	h'F2	foF2	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.8	340					2.4
01		5.9	340					2.4
02		5.6	335					2.4
03		5.2	350					2.3
04		5.1	350					2.3
05		5.0	345					2.2
06		5.3	315					2.4
07		0.4	245		155	1.9		3.0
00		11.5	235		120	2.5	2.6	3.0
09		13.2	230		110	2.9	3.4	3.0
10		14.3	230		105	3.1	(4.0)	(3.0)
11		14.9	225		105	3.3	(4.4)	---
12		>14.9	230		105	3.4	3.7	(2.9)
13		>14.4	225		105	3.3		2.9
14		>13.6	230		105	3.2		2.9
15		13.2	235		110	2.8	(2.6)	2.9
16		11.9	240		125	2.5	(2.6)	3.1
17		10.8	230		(135)	1.8	(2.6)	3.1
18		9.0	235				(2.3)	3.0
19		7.6	230				(2.1)	3.1
20		6.0	245					2.9
21		5.6	275				(2.0)	2.5
22		5.7	325				1.5	2.3
23		5.9	345					2.3

Time: 60.0°W.
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 70

Kodaikanal, India (10.2°N, 77.5°E) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	12.2						2.90
01	260	10.8						2.90
02	260	10.0						2.90
03	255	9.6						3.00
04	240	7.7						3.10
05	235	6.1						3.20
06	270	7.6						3.05
07	260	10.8	250	---	120	2.9		2.90
08	(260)	12.4	240	---	115	---	9.0	2.60
09	(280)	12.7	230	---	---	---	11.0	2.30
10	(300)	11.8	220	---	---	---	12.0	2.25
11	300	11.4	220	---	---	---	12.0	2.20
12	(295)	11.4	220	---	---	---	12.0	2.20
13	280	11.7	220	---	---	---	12.2	2.20
14	---	12.0	220	---	---	---	12.0	2.25
15	---	12.7	230	---	115	3.7	11.0	2.25
16	255	12.8	240	---	115	3.2	9.0	2.30
17	270	12.8			---	---	8.0	2.30
18	310	12.7						2.20
19	420	11.5						2.10
20	430	(10.9)						(2.15)
21	380	(11.2)						(2.30)
22	320	(11.8)						(2.50)
23	280	12.2						(2.70)

Time: 75.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 71

Calcutta, India (22.9°N, 88.5°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	9.0						3.2
01	250	8.0					2.0	3.4
02	240	6.6					2.0	3.3
03	225	6.1						3.2
04	240	4.8						3.2
05	240	4.0					2.0	2.05
06	270	4.6					2.1	3.0
07	250	7.7			110	2.5		3.3
08	250	10.0	240	(4.5)	105	3.0		3.3
09	290	10.5	230	4.9	100	3.4		3.2
10	300	10.7	220	5.0	100	3.6		3.2
11	310	11.0	210	5.2	100	3.6		3.2
12	310	11.2	210	5.5	100	3.7		3.15
13	315	11.2	205	5.5	100	3.7		3.15
14	320	11.0	200	5.3	100	3.5		3.2
15	315	11.0	230	5.0	100	3.4		3.2
16	300	11.0	240	4.6	100	3.1		3.2
17	260	11.0			110	2.6	3.5	3.3
18	260	10.7						3.4
19	285	10.5					2.1	3.3
20	245	10.3						3.2
21	230	10.2						3.5
22	230	9.9						3.5
23	240	9.4						3.2

Time: 90.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 72

Kodaikanal, India (10.2°N, 77.5°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	12.1						3.00
01	240	11.0						3.05
02	245	9.3						3.05
03	240	8.9						3.00
04	240	7.0						3.10
05	240	5.2						3.10
06	280	6.4						3.00
07	260	9.8	---	---	120	2.7	6.2	2.90
08	270	11.8	240	---	115	---	9.4	2.60
09	290	12.7	225	---	---	---	11.0	2.45
10	300	11.8	220	---	---	---	12.0	2.35
11	290	11.2	220	---	---	---	12.2	2.30
12	300	11.0	215	---	---	---	12.2	2.30
13	(300)	11.4	210	---	110	---	12.0	2.25
14	---	11.7	210	---	105	---	12.0	2.25
15	---	12.1	220	---	---	---	11.4	2.30
16	240	12.3	235	---	115	---	10.0	2.25
17	270	12.1			120	---	8.0	2.30
18	310	11.6						2.20
19	420	9.3						2.10
20	440	(8.8)						(2.20)
21	360	(9.0)						(2.60)
22	300	(9.9)						(2.70)
23	260	11.5						2.80

Time: 75.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

USCOMM-NBS-BL

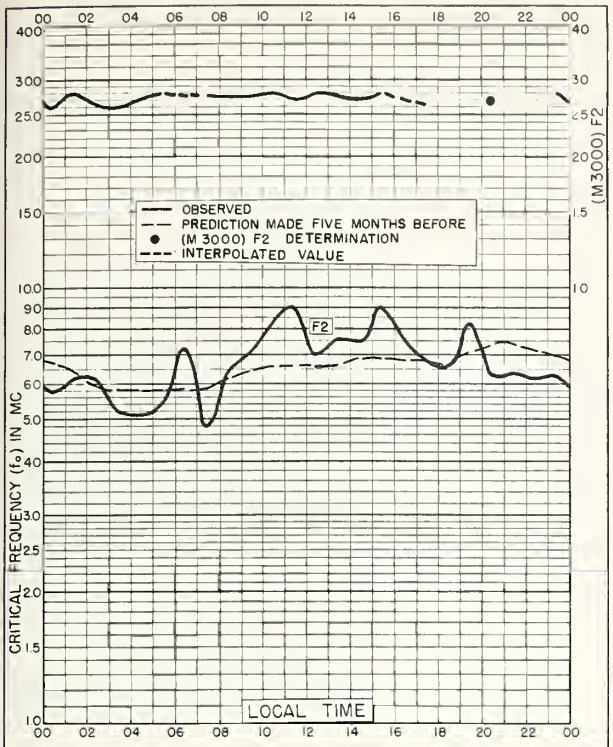

Fig. 1. FLETCHERS ICE I.
80.0°N, 114.0° W DECEMBER 1957

NBS 503

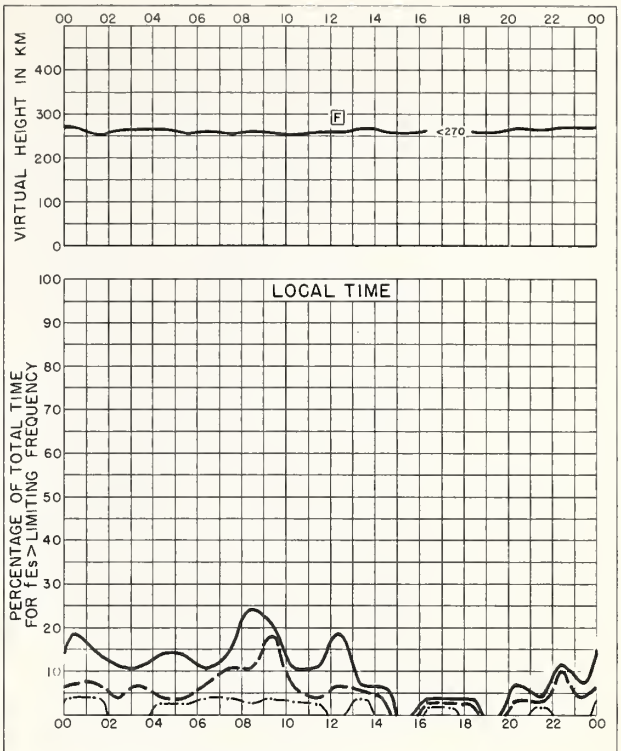

Fig. 2. FLETCHERS ICE I. DECEMBER 1957

NBS 490

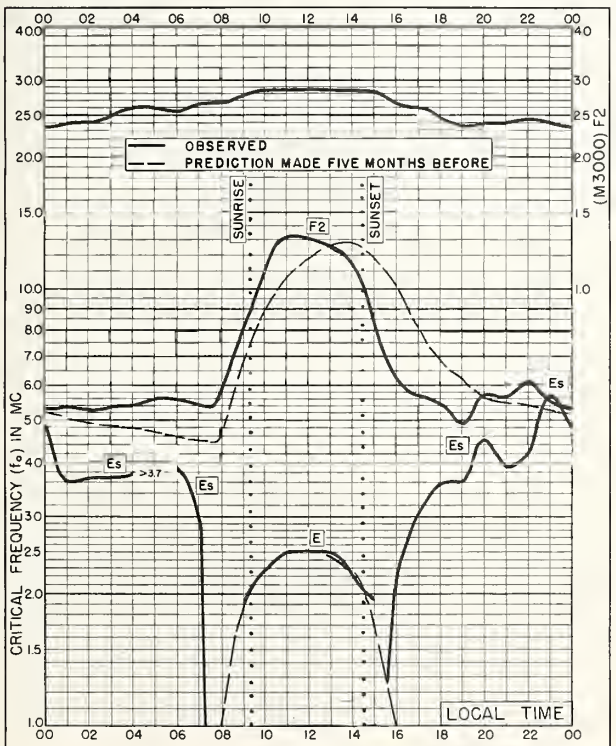

Fig. 3. NARSARSSUAK, GREENLAND
61.2°N, 45.4° W DECEMBER 1957

NBS 503

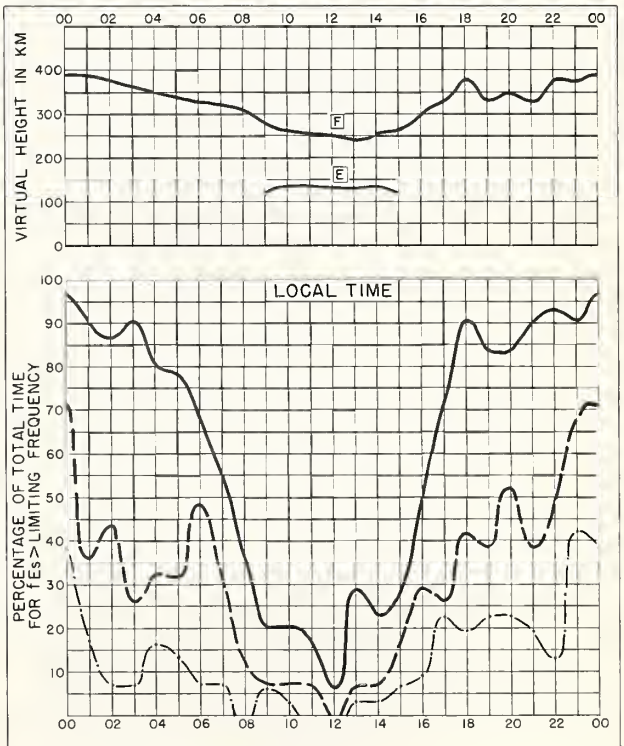

Fig. 4. NARSARSSUAK, GREENLAND DECEMBER 1957

NBS 490

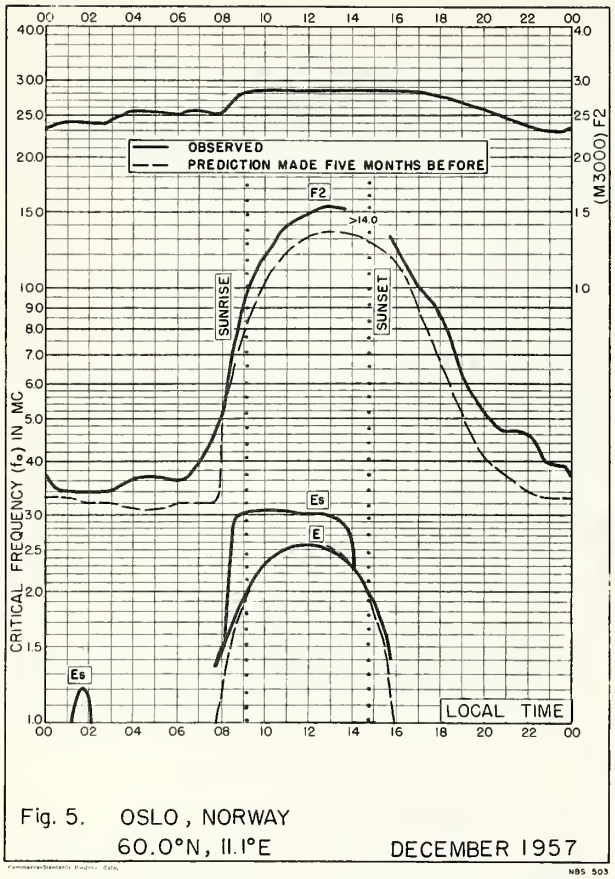

Fig. 5. OSLO, NORWAY
60.0°N, 11.1°E DECEMBER 1957

NBS 503

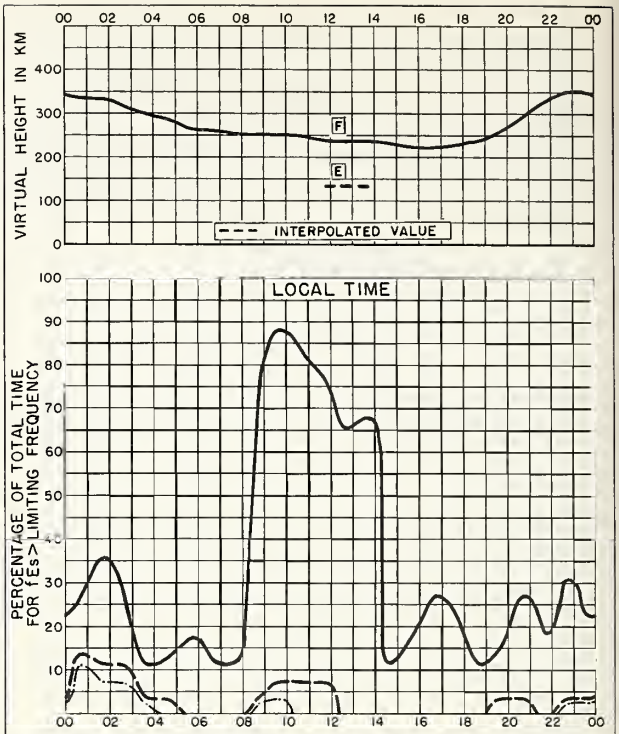

Fig. 6. OSLO, NORWAY DECEMBER 1957

NBS 490

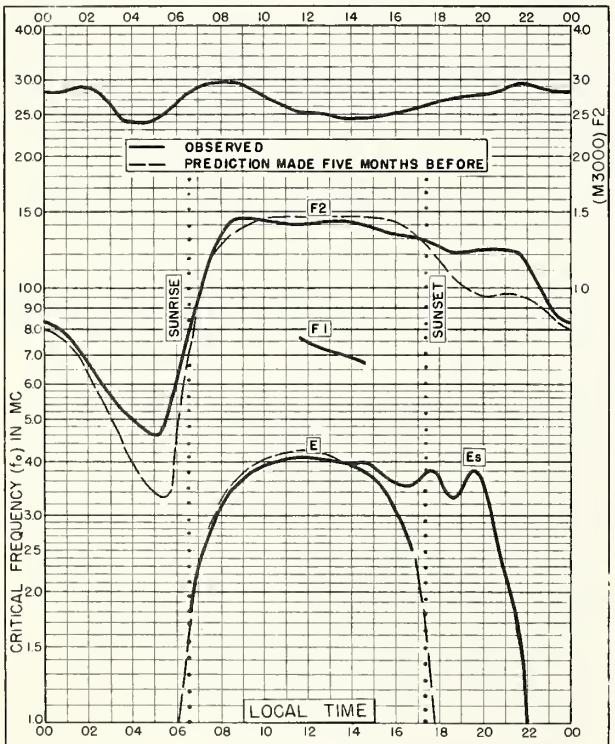

Fig. 7. MAUI, HAWAII
20.8°N, 156.5°W DECEMBER 1957

NBS 503

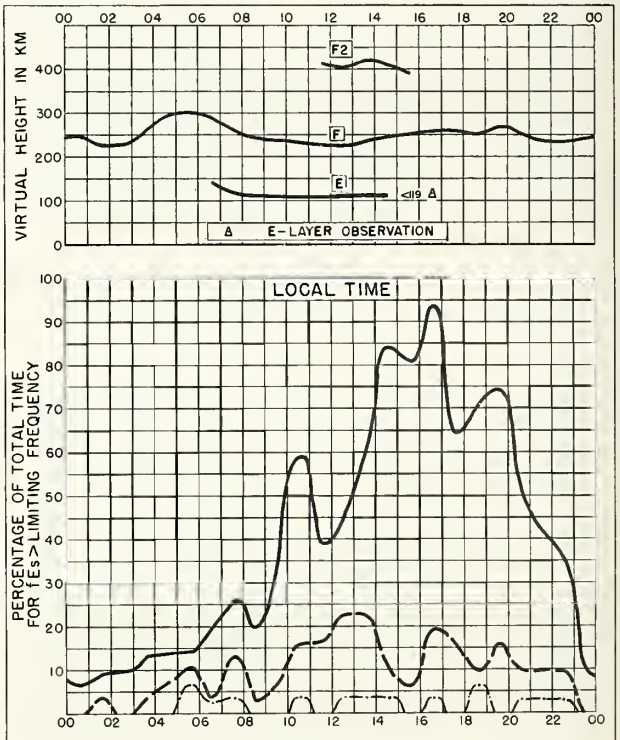

Fig. 8. MAUI, HAWAII DECEMBER 1957

NBS 490

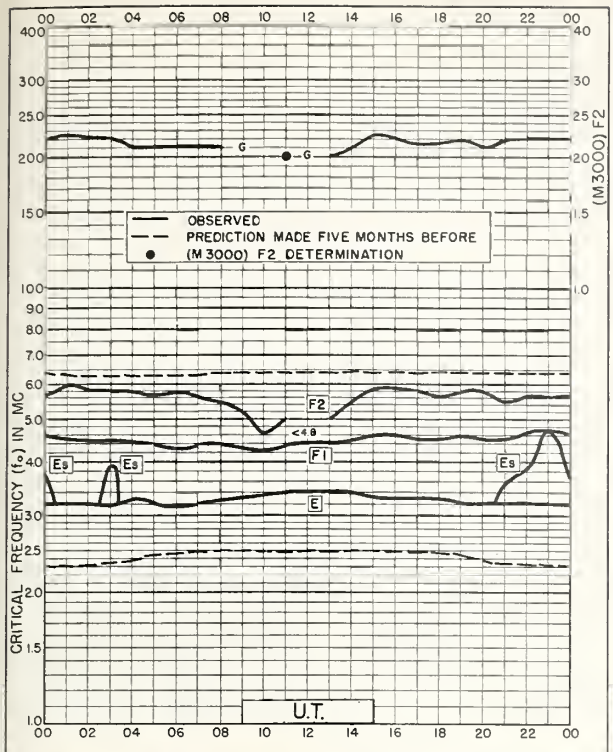

Fig. 9. POLE STATION
90.0°S DECEMBER 1957

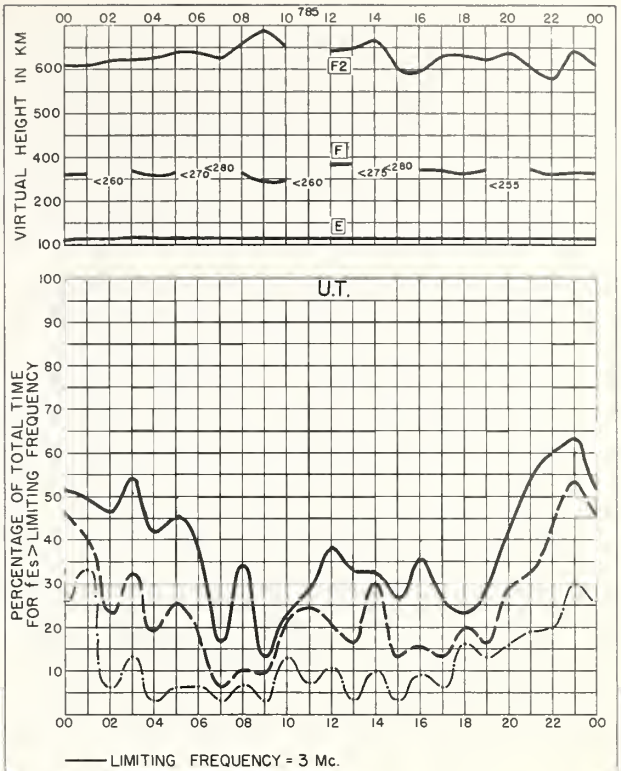

Fig. 10. POLE STATION DECEMBER 1957

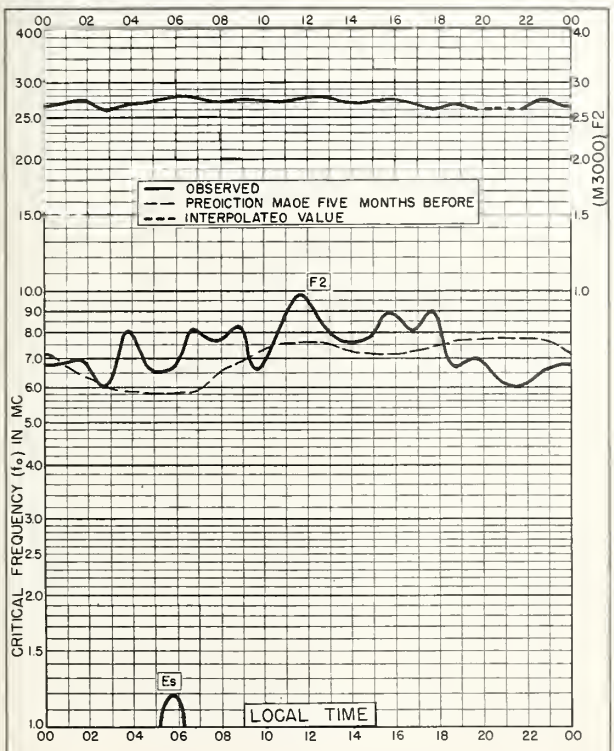

Fig. 11. FLETCHERS ICE I.
80.5°N, 109.0°W NOVEMBER 1957

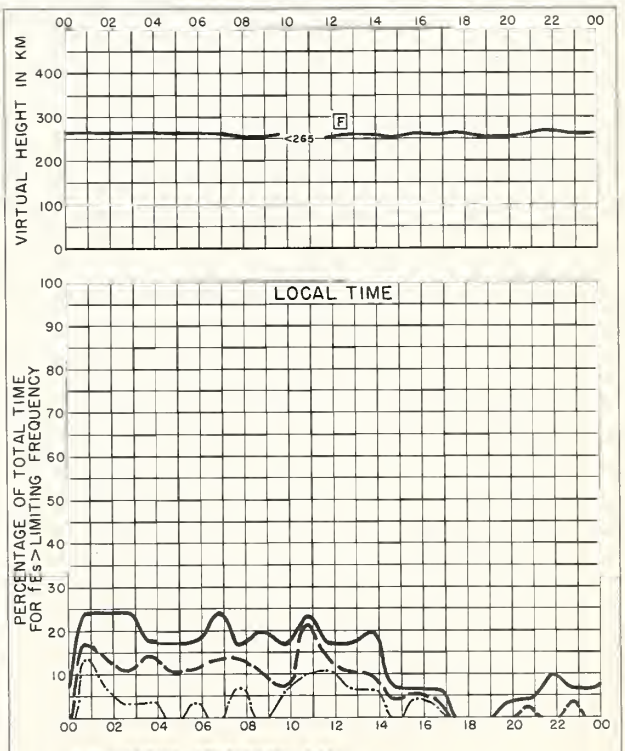

Fig. 12. FLETCHERS ICE I. NOVEMBER 1957

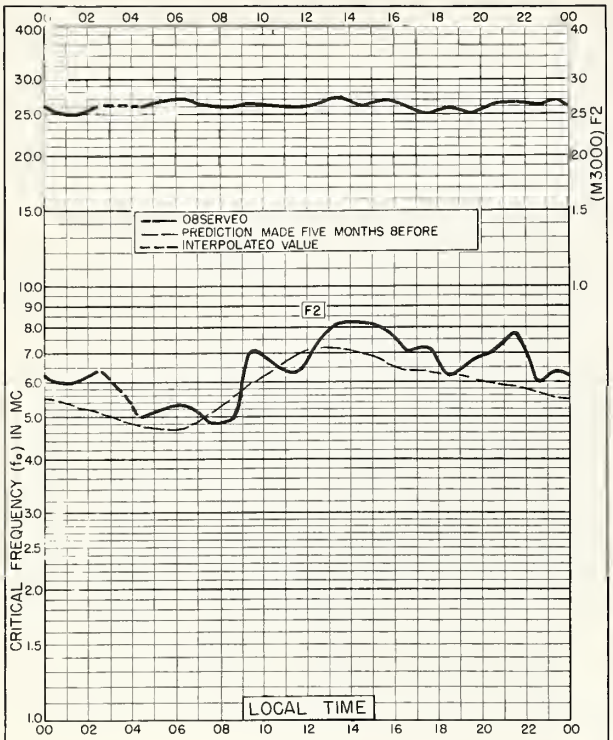

Fig. 13. THULE, GREENLAND
76.6°N, 68.7°W NOVEMBER 1957

NBS 503

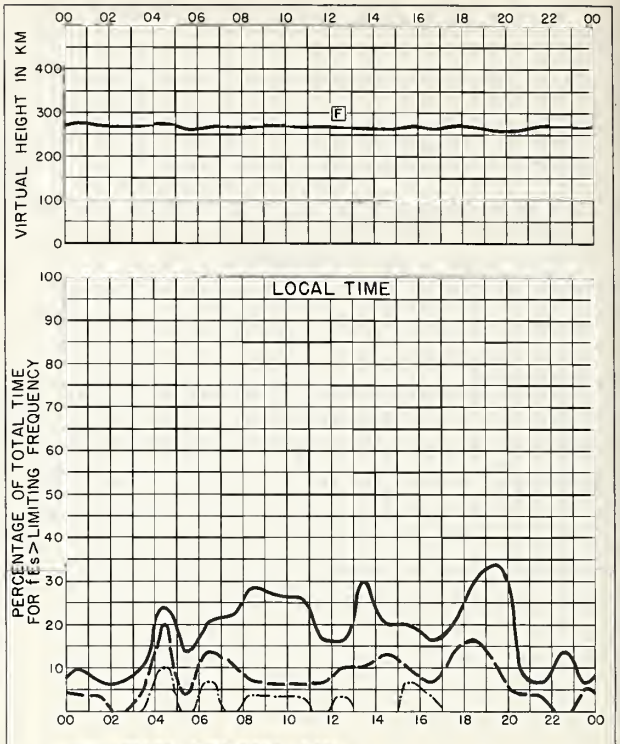

Fig. 14. THULE, GREENLAND NOVEMBER 1957

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NBS 490

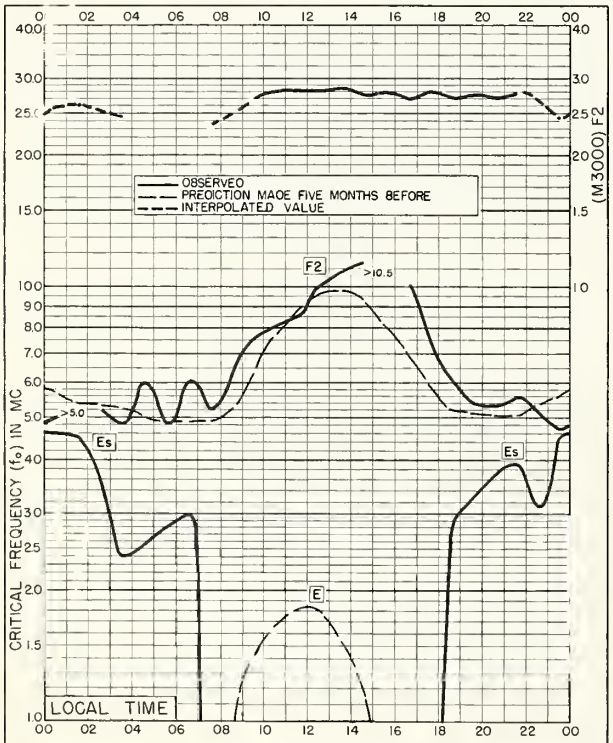


Fig. 15. POINT BARROW, ALASKA
71.3°N, 156.8°W NOVEMBER 1957

NBS 503

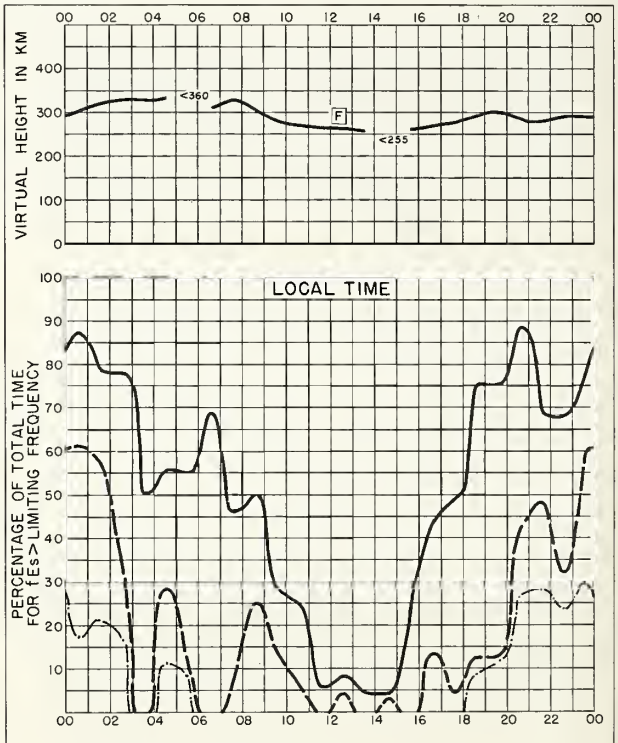


Fig. 16. POINT BARROW, ALASKA NOVEMBER 1957

Commerce-Standards-Boulder, Colo.

NBS 490

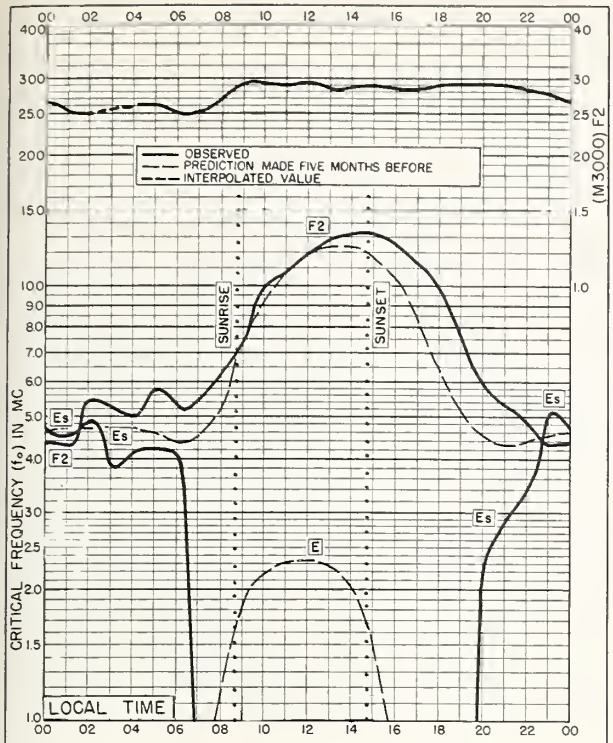


Fig. 17. FAIRBANKS, ALASKA
64.9°N, 147.8°W NOVEMBER 1957

NBS 503

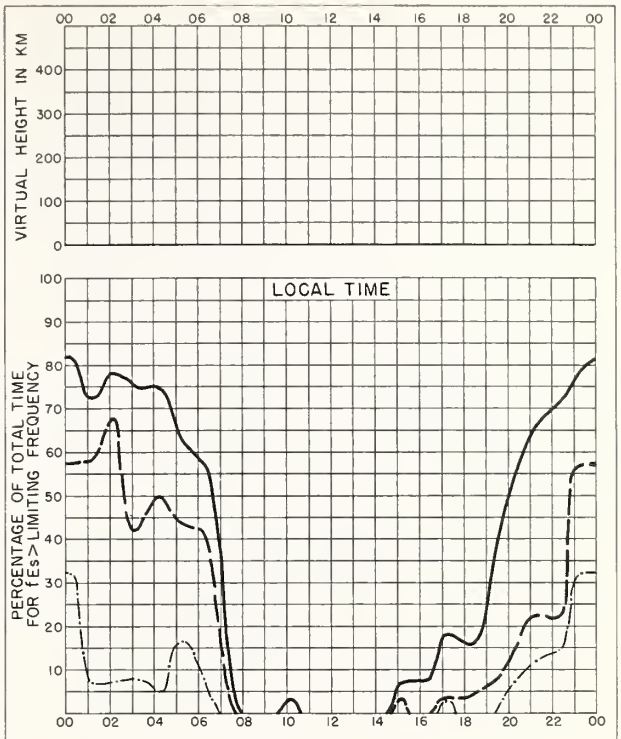


Fig. 18. FAIRBANKS, ALASKA NOVEMBER 1957

NBS 490

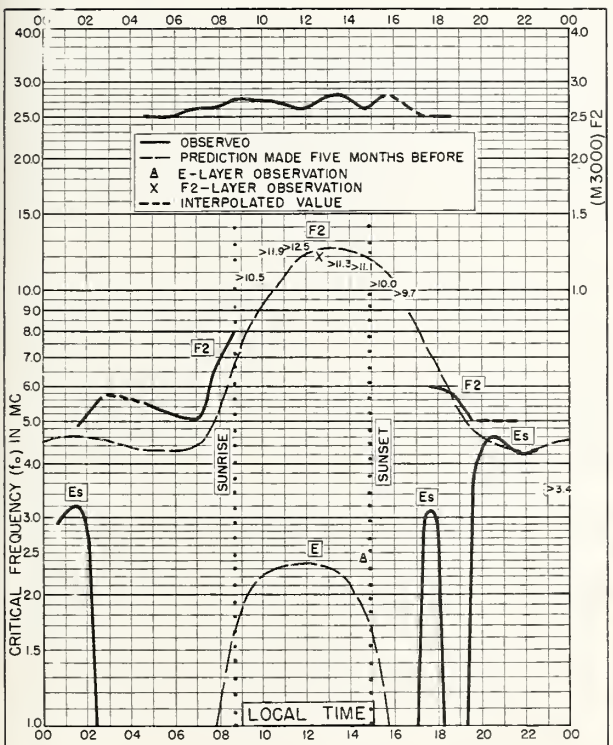


Fig. 19. REYKJAVIK, ICELAND
64.1°N, 21.8°W NOVEMBER 1957

NBS 503

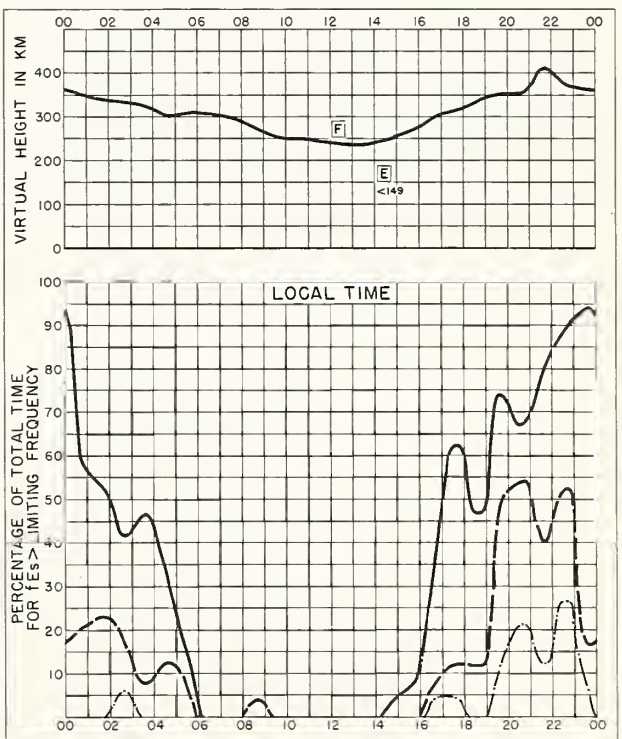


Fig. 20. REYKJAVIK, ICELAND NOVEMBER 1957

NBS 490

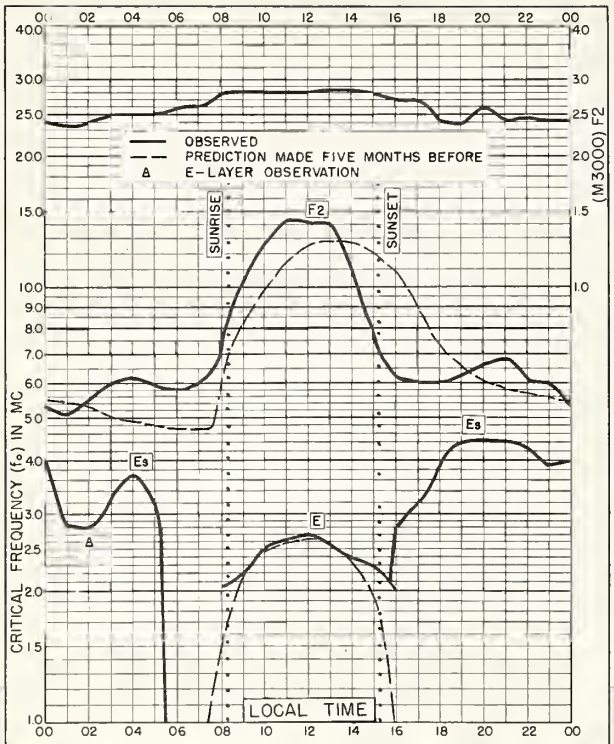
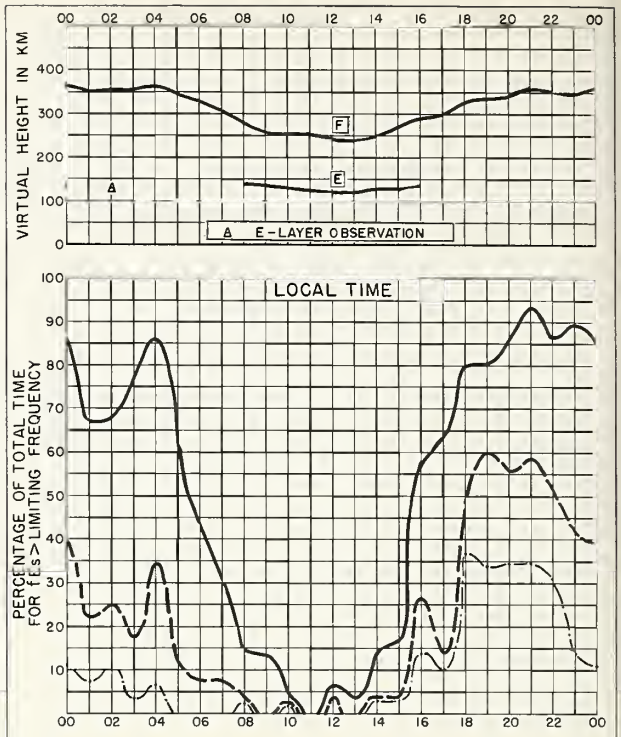


Fig. 21. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W NOVEMBER 1957

NBS 503



NOVEMBER 1957

Fig. 22. NARSARSSUAK, GREENLAND

NBS 490

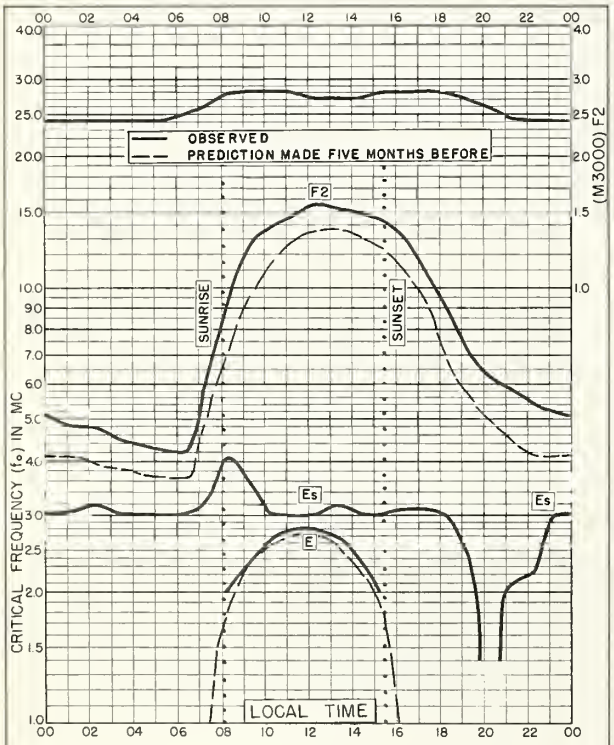


Fig. 23. UPSALA, SWEDEN
59.8°N, 17.6°E NOVEMBER 1957

NBS 503

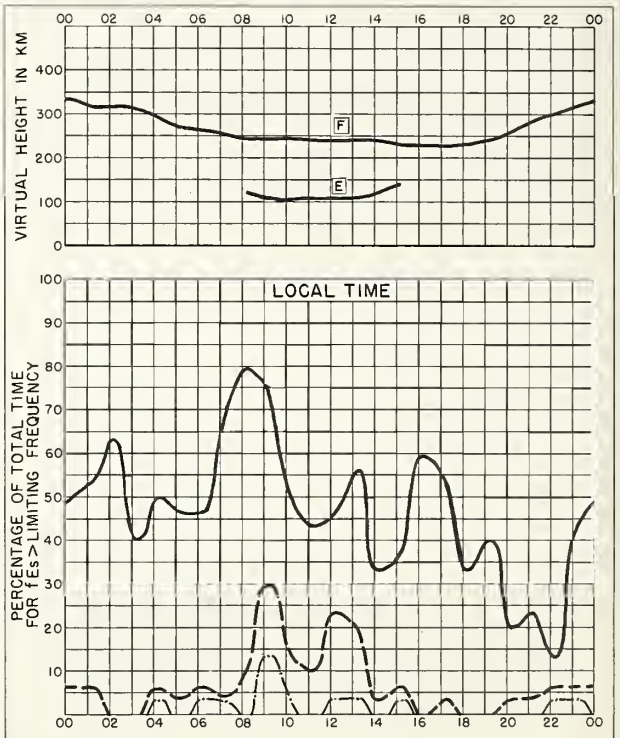


Fig. 24. UPSALA, SWEDEN NOVEMBER 1957

NBS 490

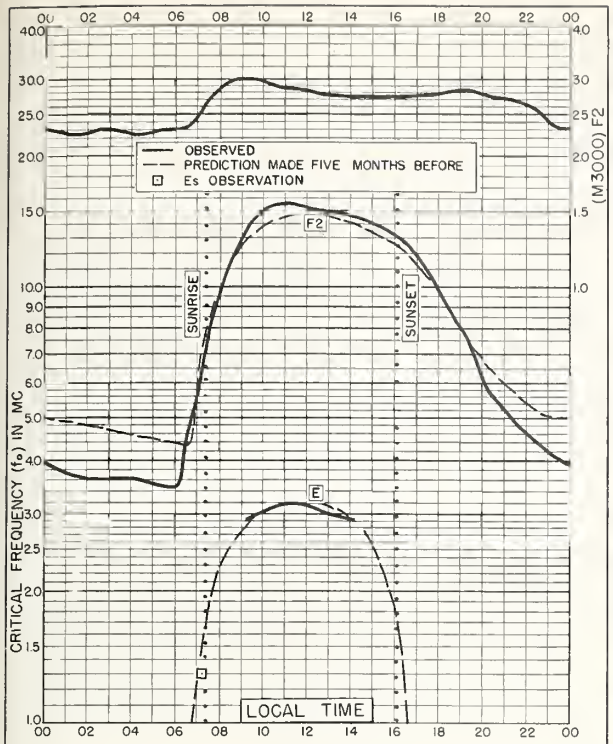


Fig. 25. ADAK, ALASKA
51.9°N, 176.6°W NOVEMBER 1957

NBS 503

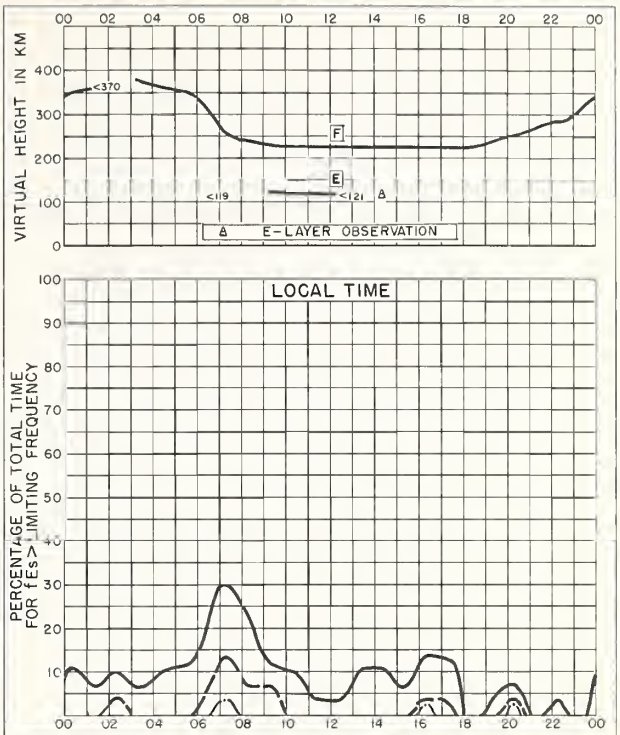


Fig. 26. ADAK, ALASKA NOVEMBER 1957

Commerce-Boulder, Colo. NBS 490

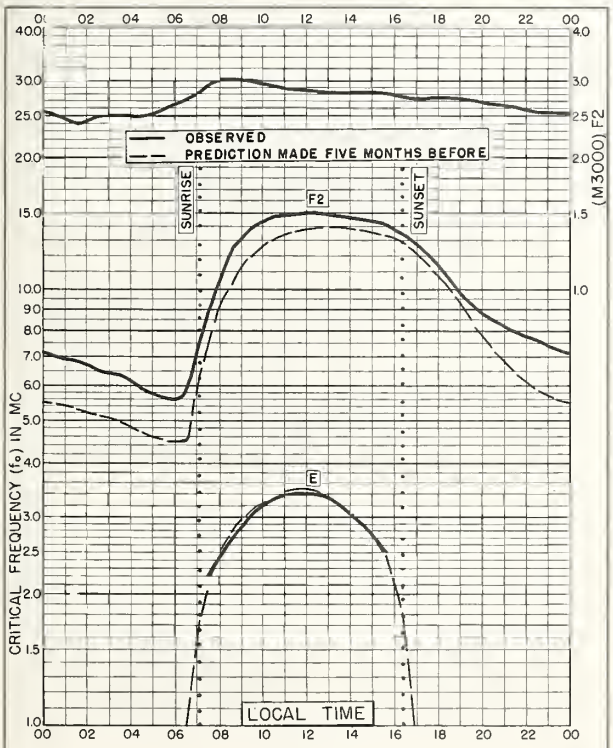


Fig. 27. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W NOVEMBER 1957

NBS 503

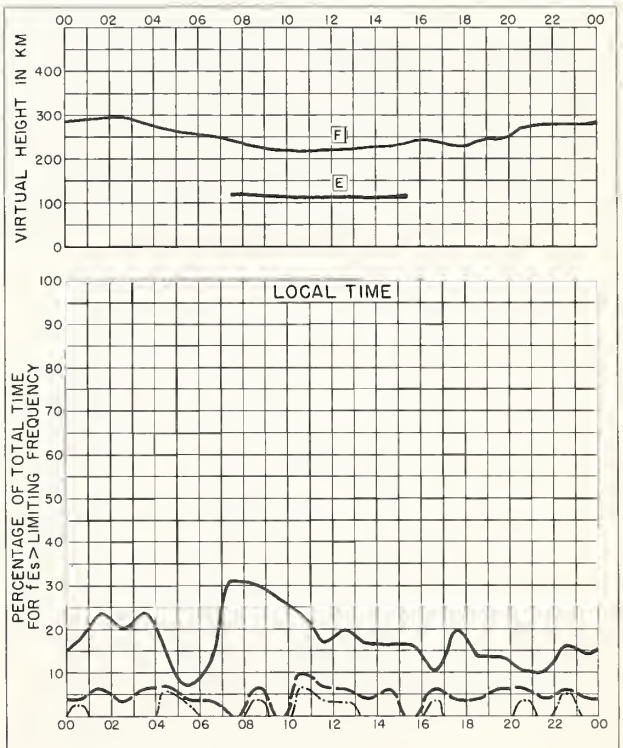


Fig. 28. ST. JOHN'S, NEWFOUNDLAND NOVEMBER 1957

Commerce-Boulder, Colo. NBS 490

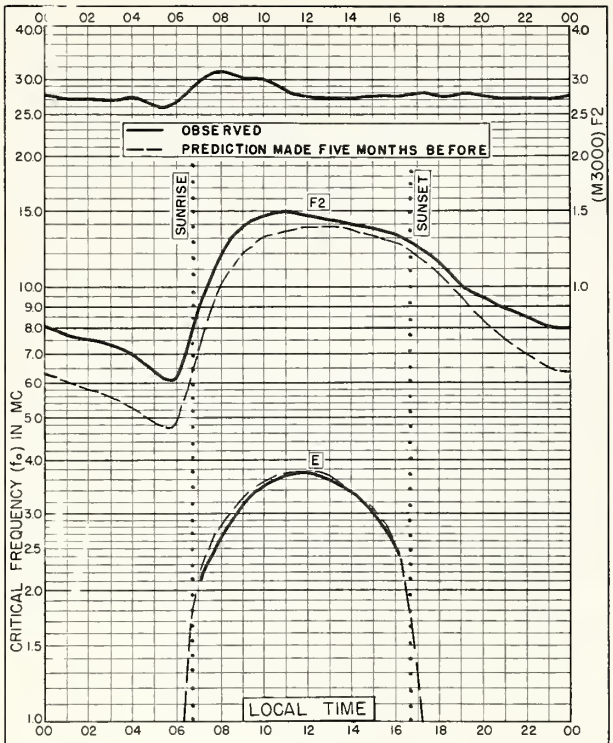
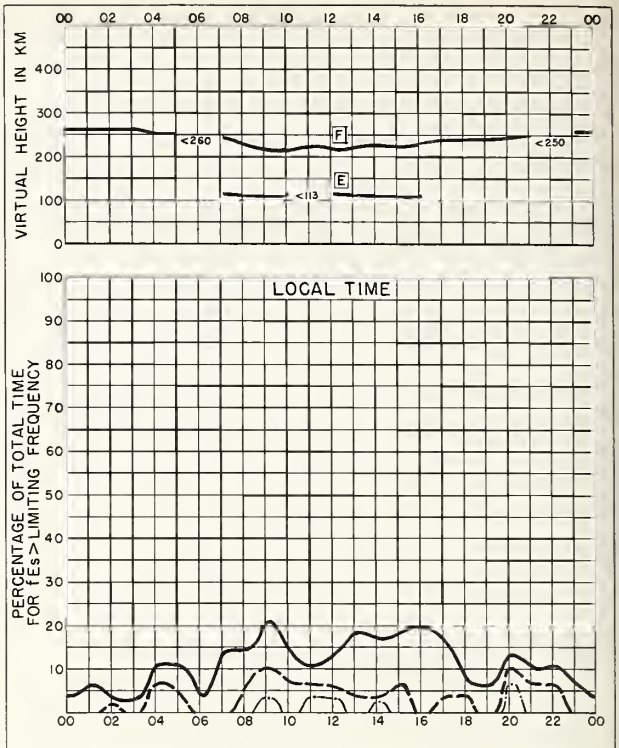


Fig. 29. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1°W NOVEMBER 1957

NBS 503



NOVEMBER 1957

Fig. 30. FT. MONMOUTH, NEW JERSEY

Commerce-Standards-Boulder, Colo.

NBS 490

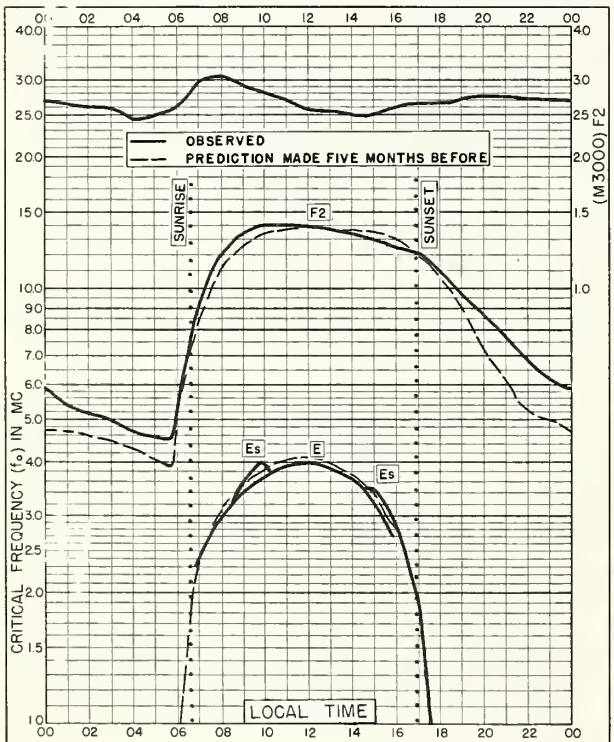
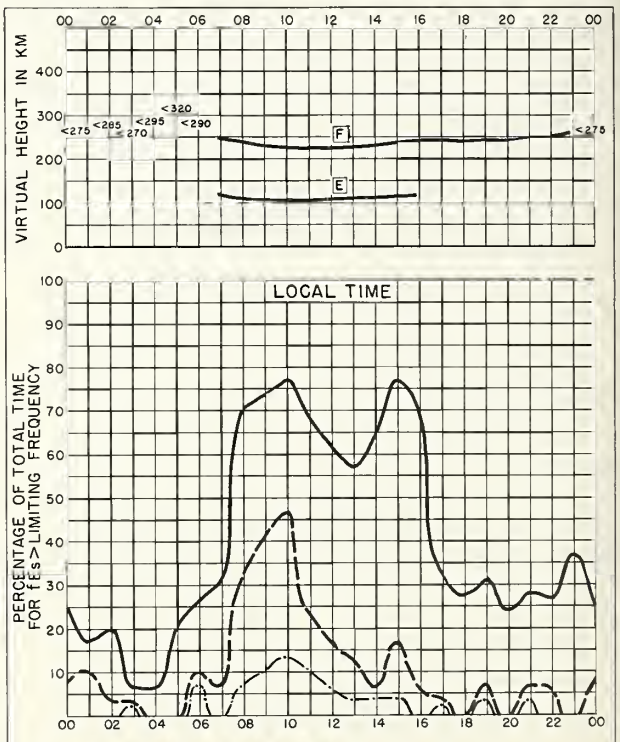


Fig. 31. WHITE SANDS, NEW MEXICO
32.3°N, 106.5°W NOVEMBER 1957

NBS 503



NOVEMBER 1957

Fig. 32. WHITE SANDS, NEW MEXICO

Commerce-Standards-Boulder, Colo.

NBS 490

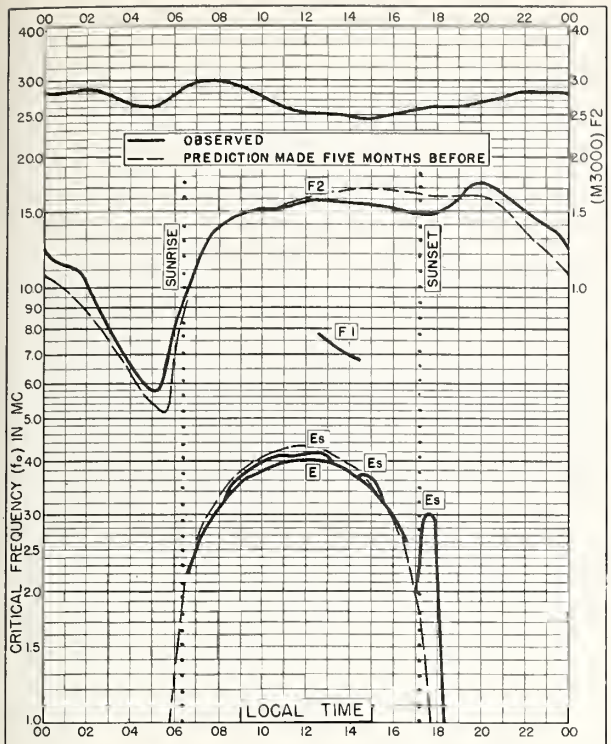


Fig. 33. OKINAWA I.
26.3°N, 127.8°E NOVEMBER 1957

NBS 503

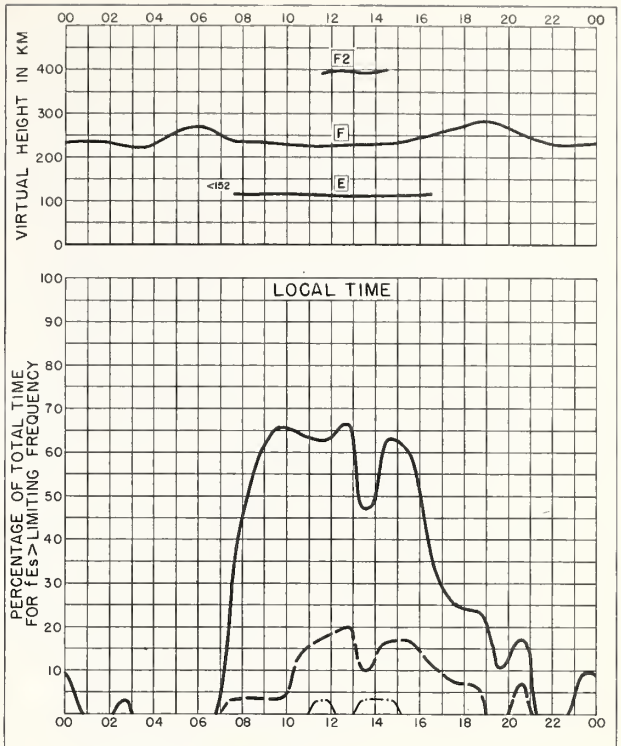


Fig. 34. OKINAWA I. NOVEMBER 1957

NBS 490

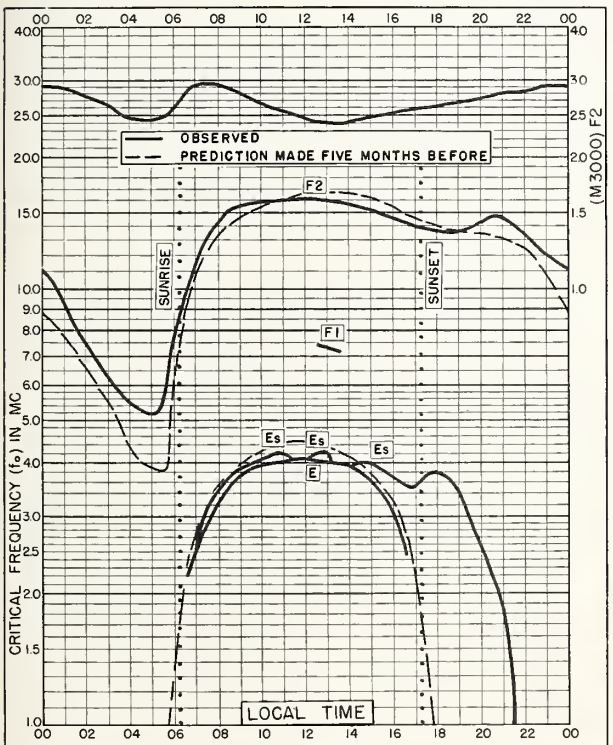


Fig. 35. MAUI, HAWAII
20.8°N, 156.5°W NOVEMBER 1957

NBS 503

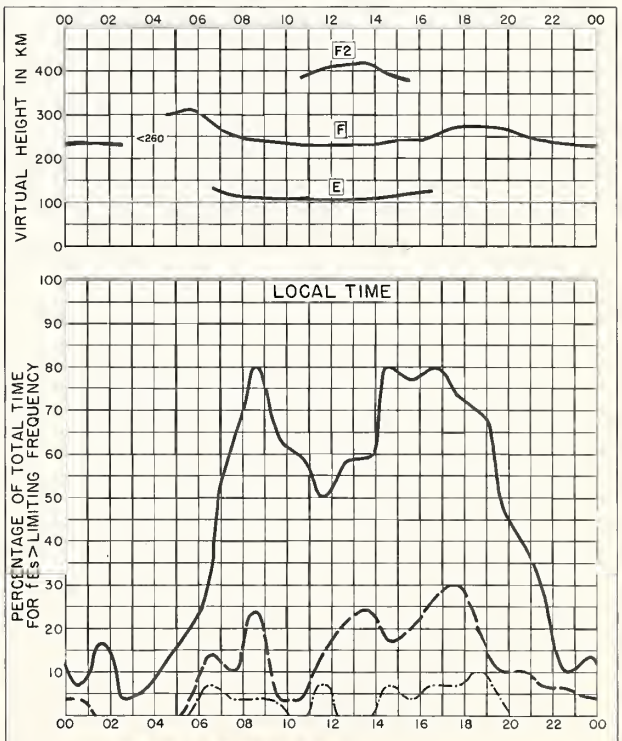


Fig. 36. MAUI, HAWAII NOVEMBER 1957

NBS 490

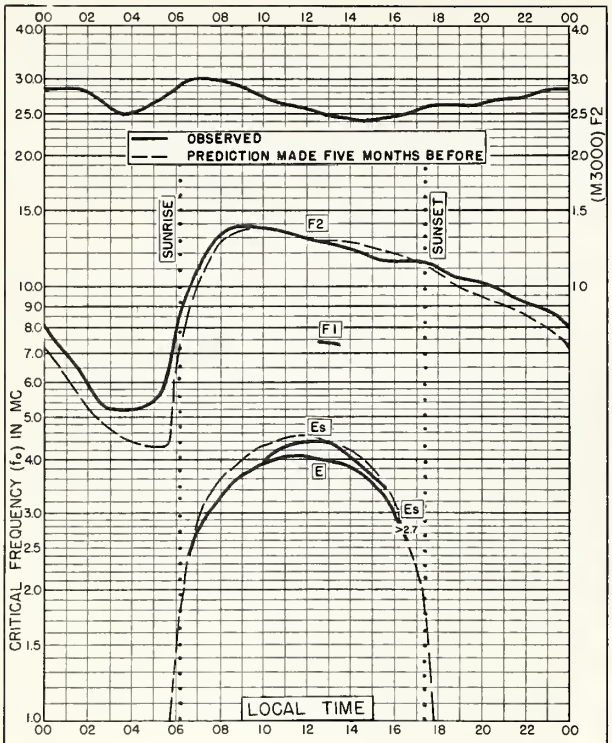


Fig. 37. PUERTO RICO, W. I.
18.5°N, 67.2°W NOVEMBER 1957

NBS 503

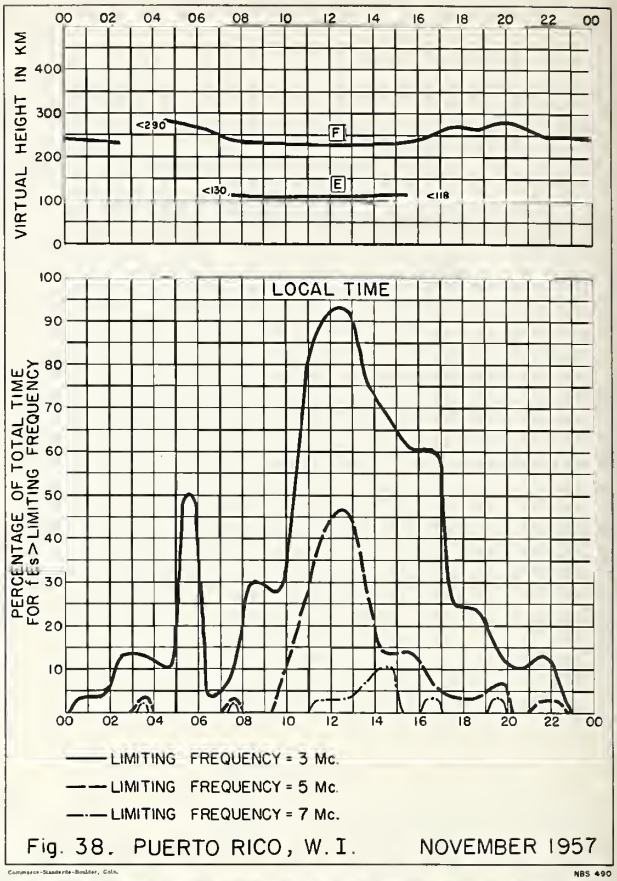


Fig. 38. PUERTO RICO, W. I. NOVEMBER 1957

NBS 490

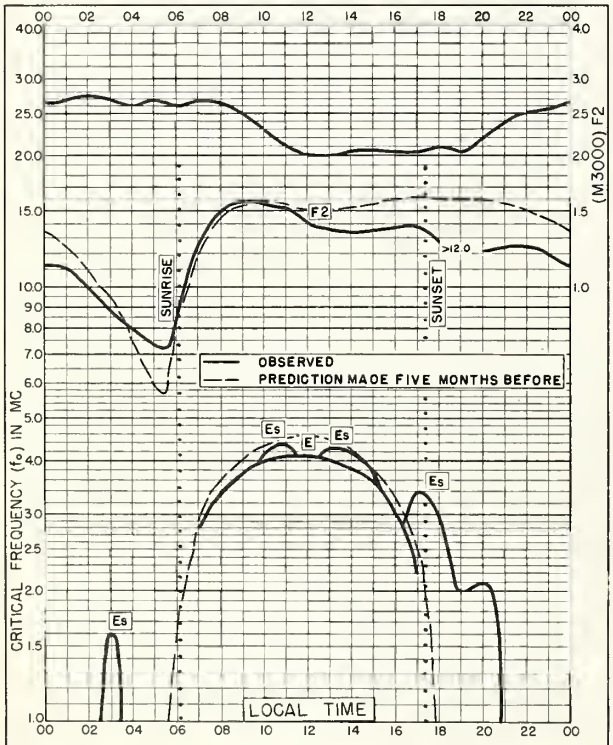


Fig. 39. BAGUIO, P. I.
16.4°N, 120.6°E NOVEMBER 1957

NBS 503

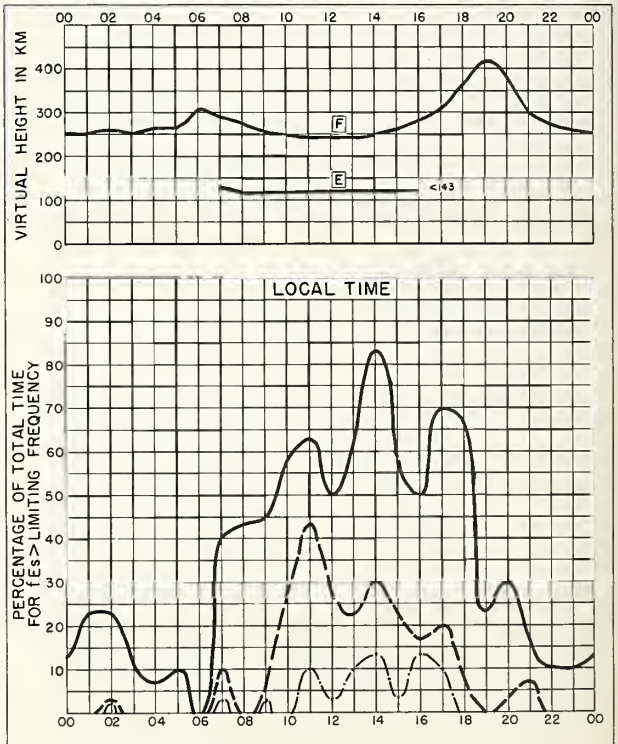


Fig. 40. BAGUIO, P. I. NOVEMBER 1957

NBS 490

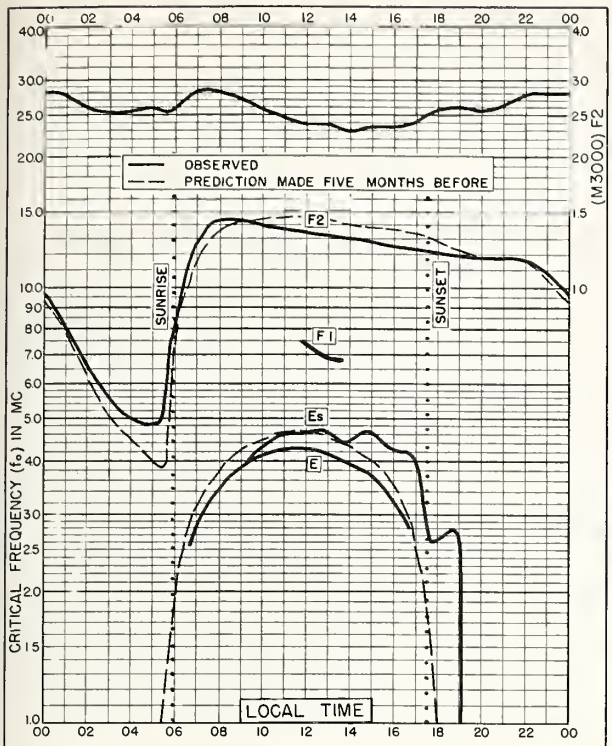


Fig. 41. PANAMA CANAL ZONE
9.4°N, 79.9°W NOVEMBER 1957

NBS 503

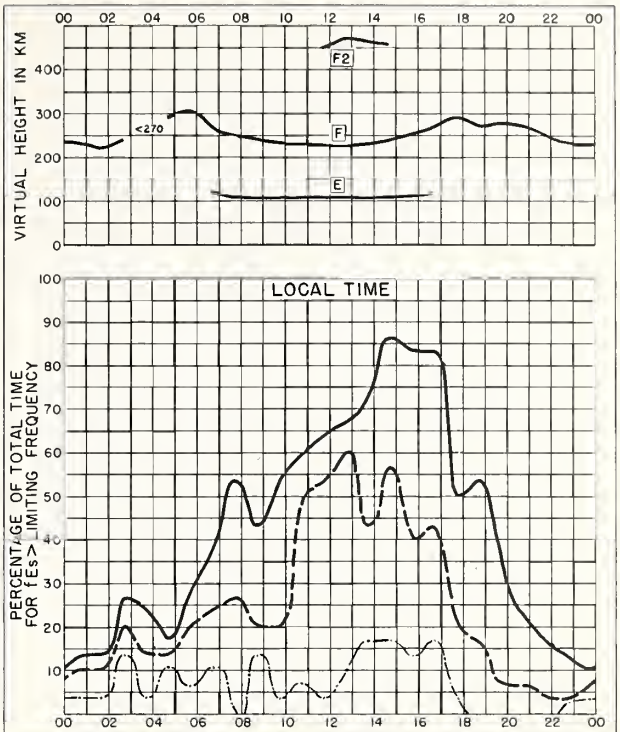


Fig. 42. PANAMA CANAL ZONE NOVEMBER 1957

NBS 490

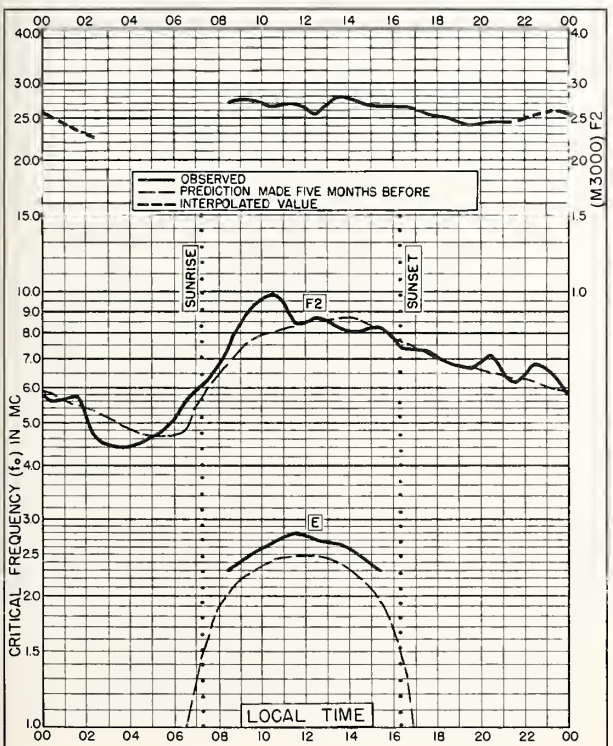


Fig. 43. GODHAVN, GREENLAND
69.3°N, 53.5°W OCTOBER 1957

NBS 503

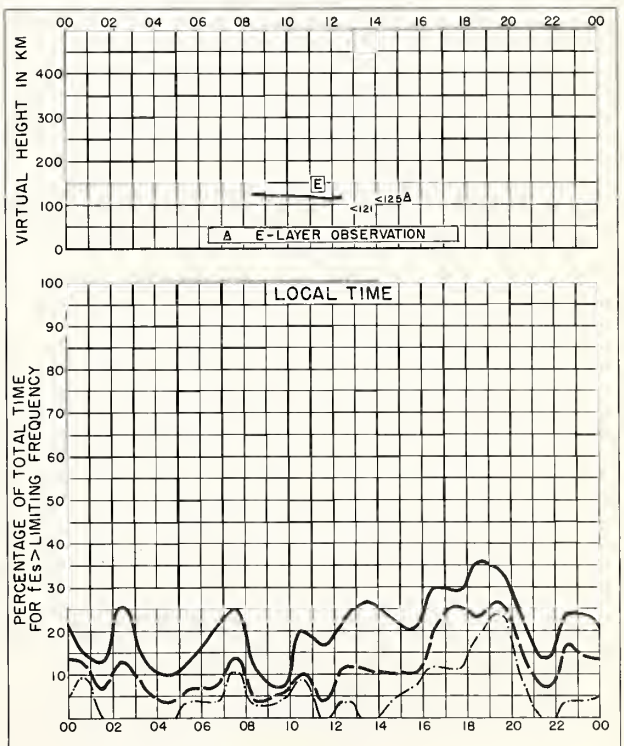


Fig. 44. GODHAVN, GREENLAND OCTOBER 1957

NBS 490

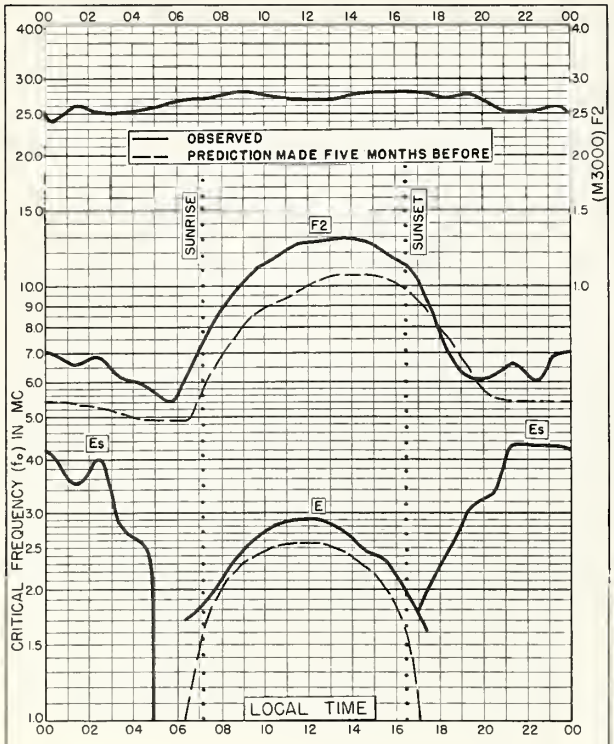


Fig. 45. KIRUNA, SWEDEN
67.8°N, 20.3°E OCTOBER 1957

NBS 503

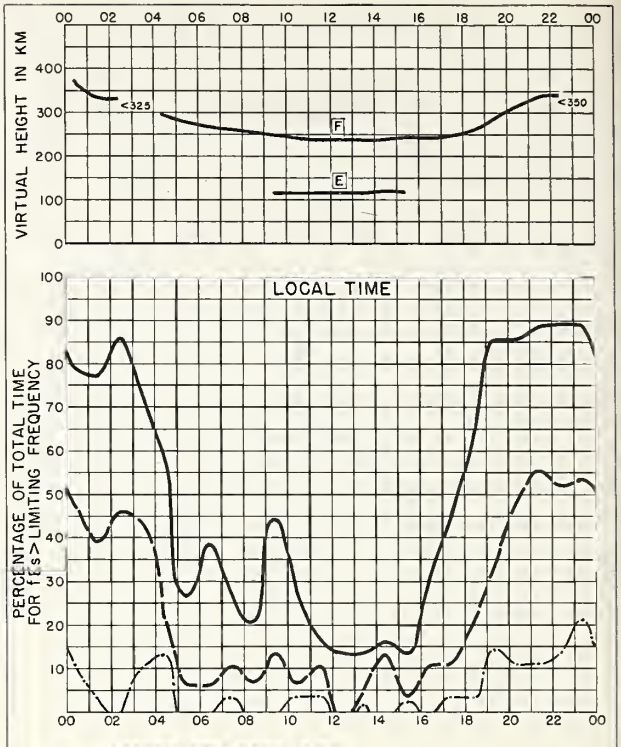


Fig. 46. KIRUNA, SWEDEN OCTOBER 1957

NBS 490

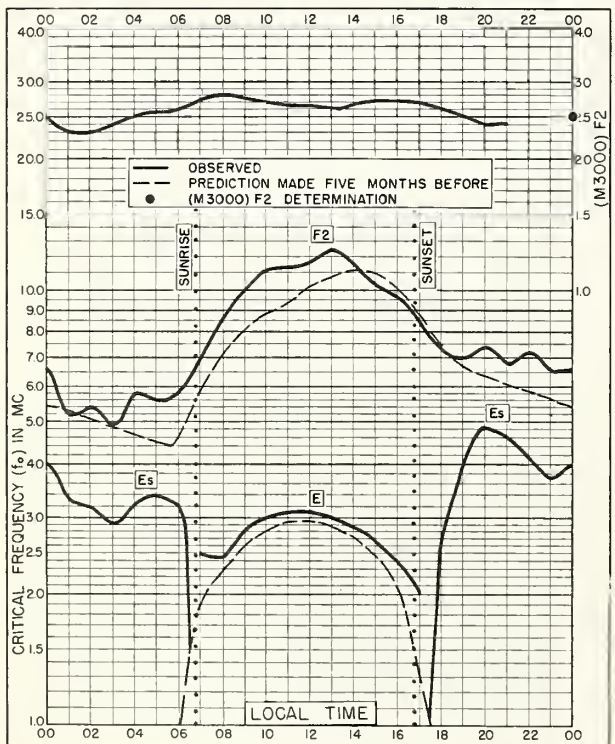
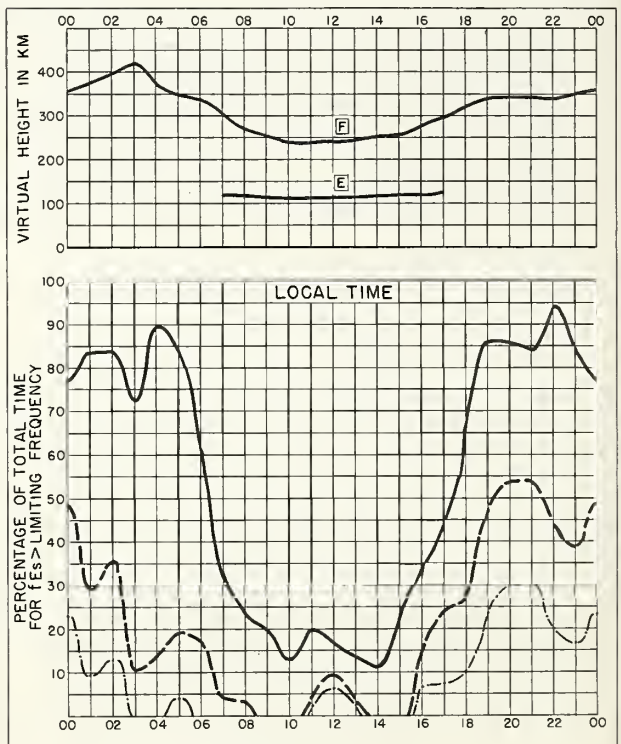


Fig. 47. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W OCTOBER 1957

NBS 503



OCTOBER 1957

Fig. 48. NARSARSSUAK, GREENLAND

NBS 490

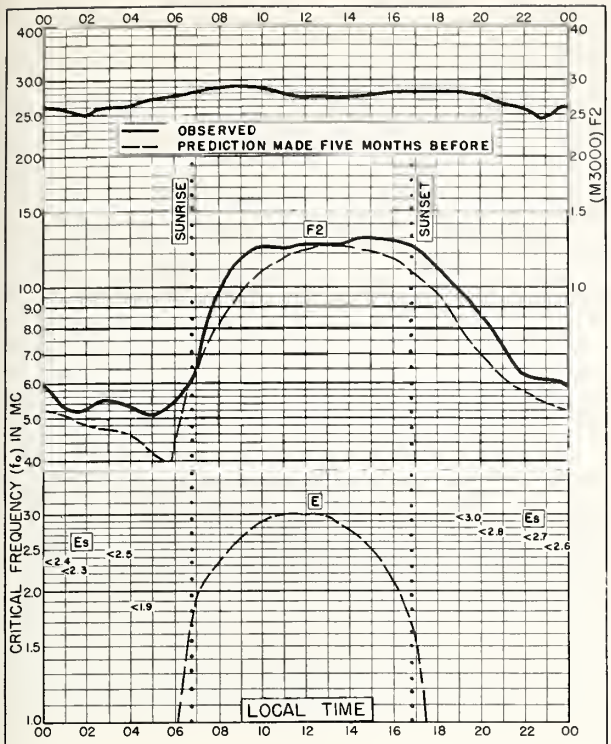


Fig. 49. NURMIJARVI, FINLAND
60.5°N, 24.6°E OCTOBER 1957

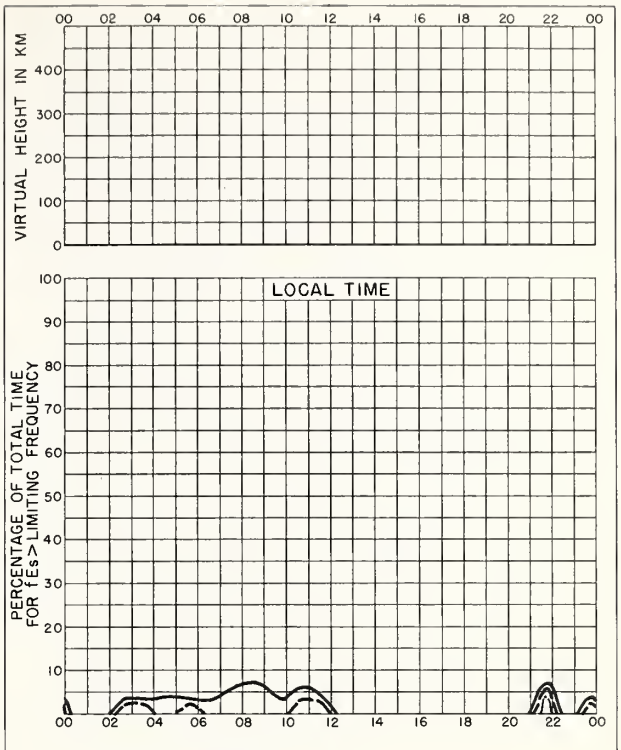


Fig. 50. NURMIJARVI, FINLAND OCTOBER 1957

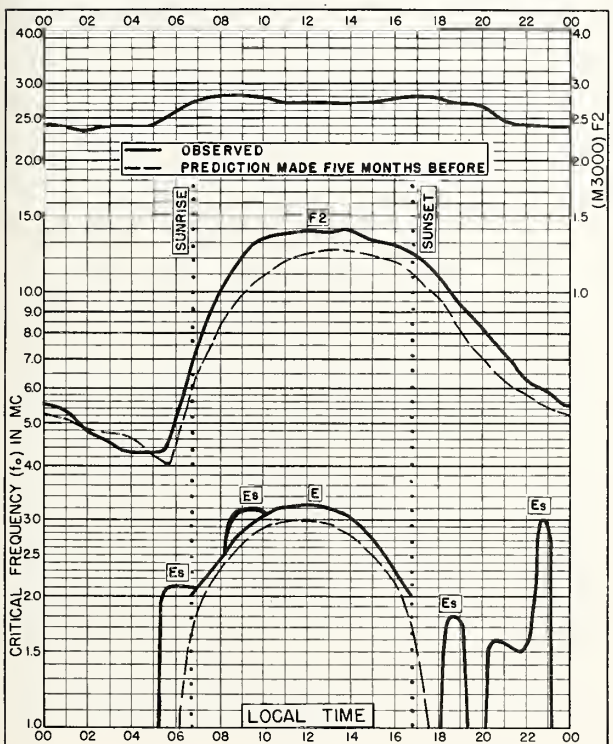


Fig. 51. OSLO, NORWAY
60.0°N, 11.1°E OCTOBER 1957

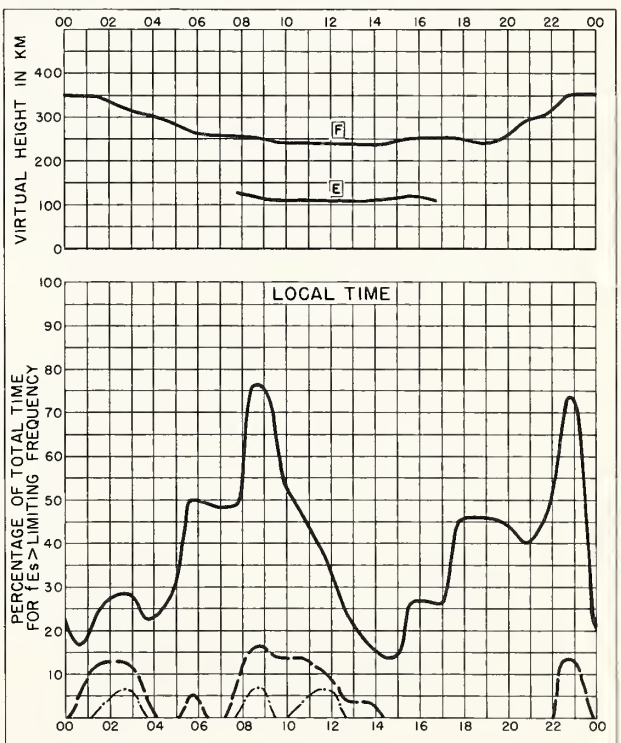


Fig. 52. OSLO, NORWAY OCTOBER 1957

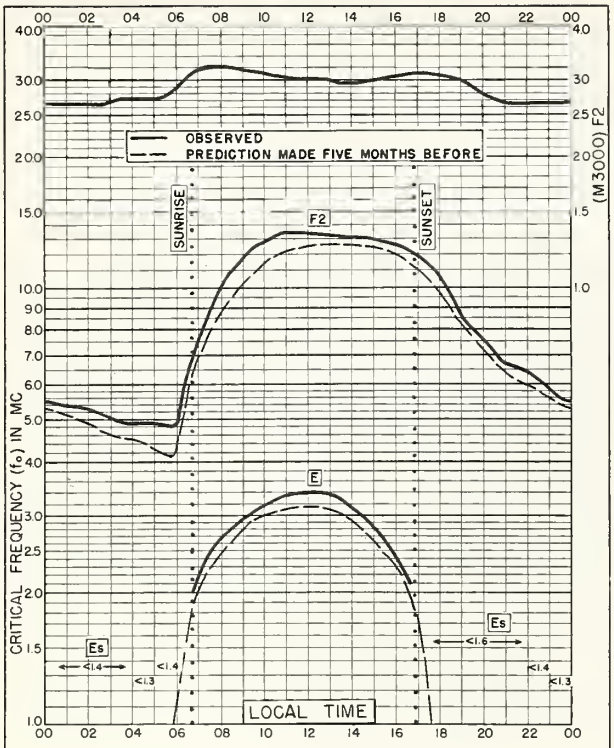


Fig. 53. INVERNESS, SCOTLAND
57.4°N, 4.2°W OCTOBER 1957

NBS 503

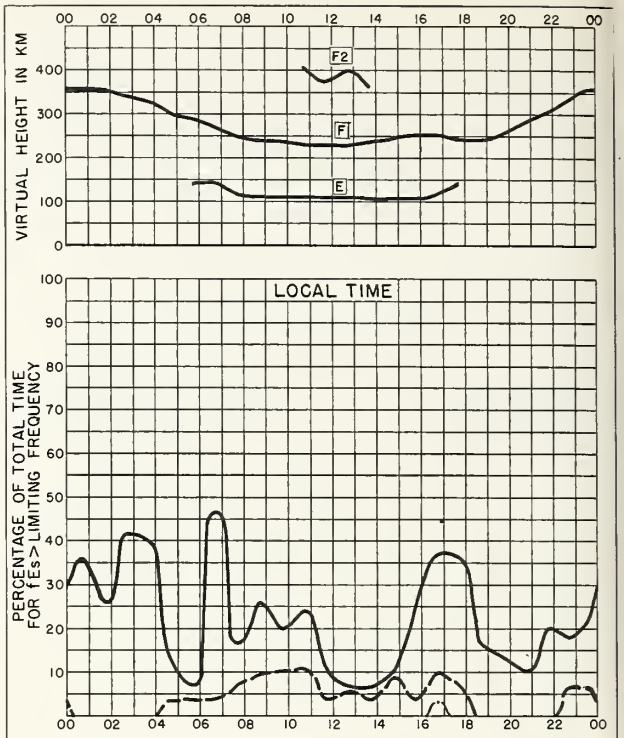


Fig. 54. INVERNESS, SCOTLAND OCTOBER 1957

NBS 490

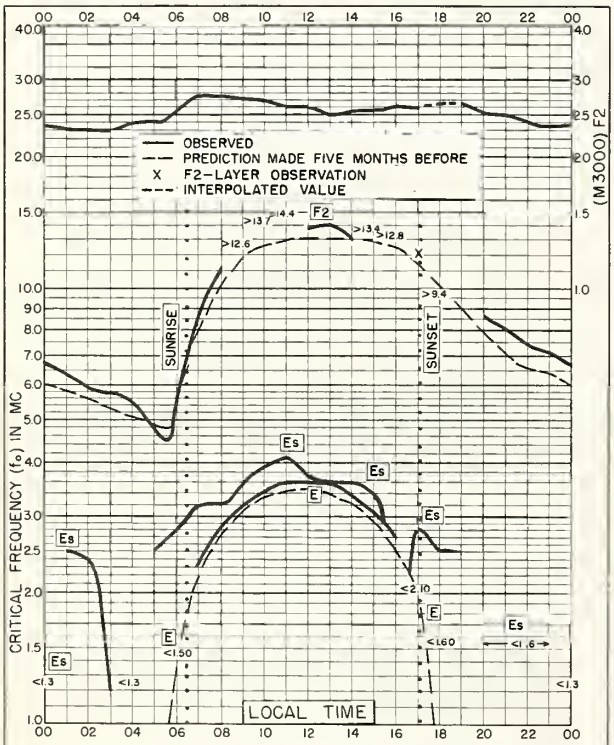


Fig. 55. SLOUGH, ENGLAND
51.5°N, 0.6°W OCTOBER 1957

NBS 503

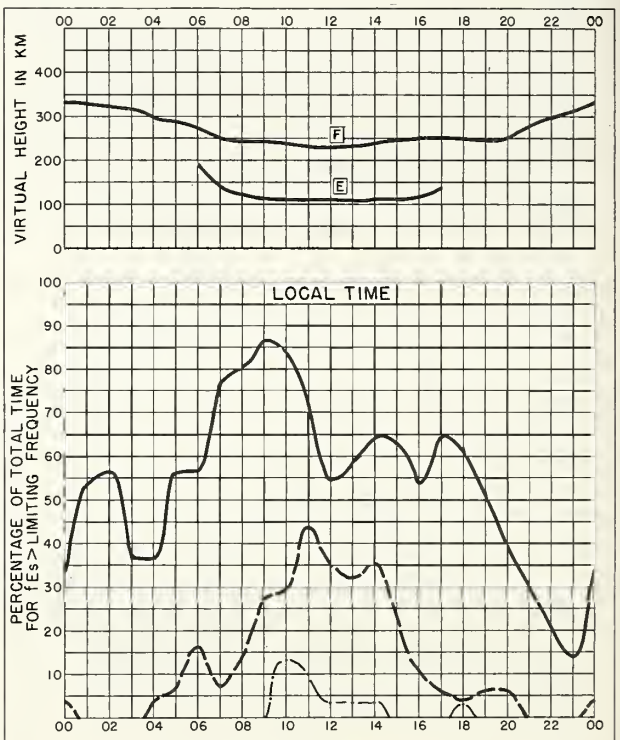


Fig. 56. SLOUGH, ENGLAND OCTOBER 1957

NBS 490

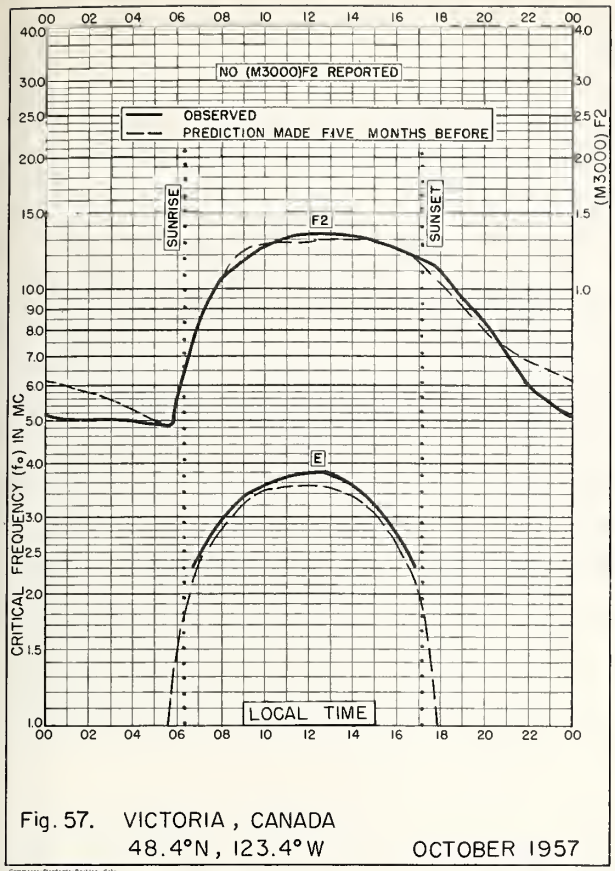


Fig. 57. VICTORIA, CANADA
48.4°N, 123.4°W OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 503

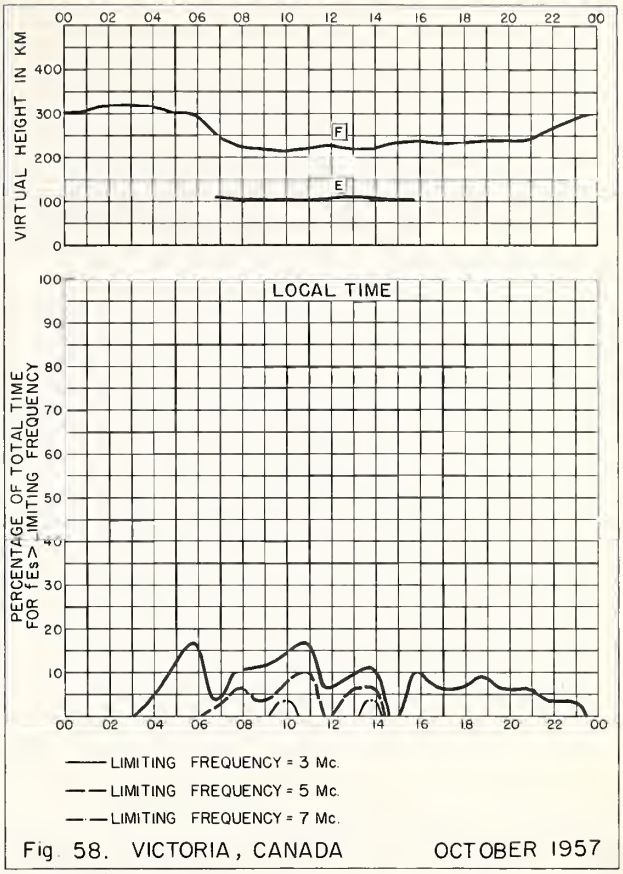


Fig. 58. VICTORIA, CANADA OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

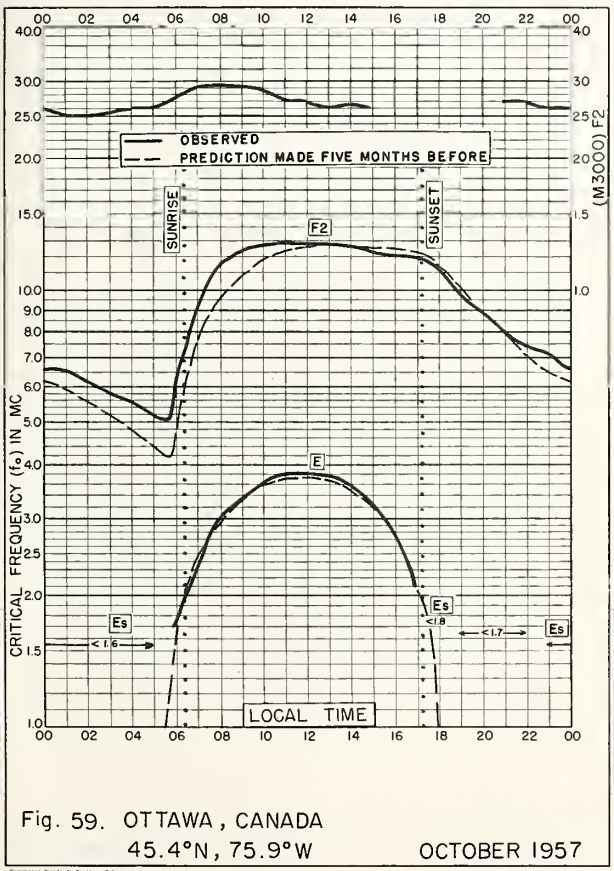


Fig. 59. OTTAWA, CANADA
45.4°N, 75.9°W OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 503

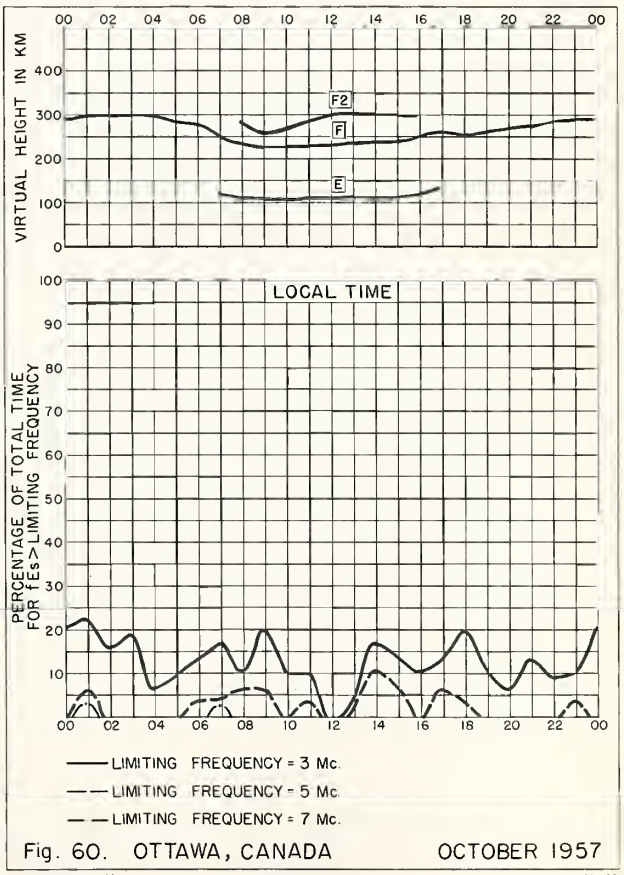


Fig. 60. OTTAWA, CANADA OCTOBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

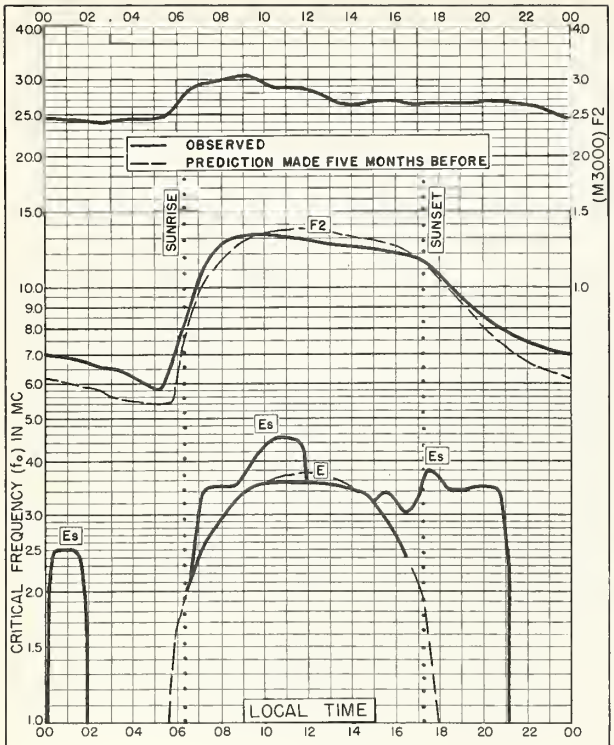


Fig. 61. WAKKANAI, JAPAN
45.4°N, 141.7°E OCTOBER 1957

NBS 503

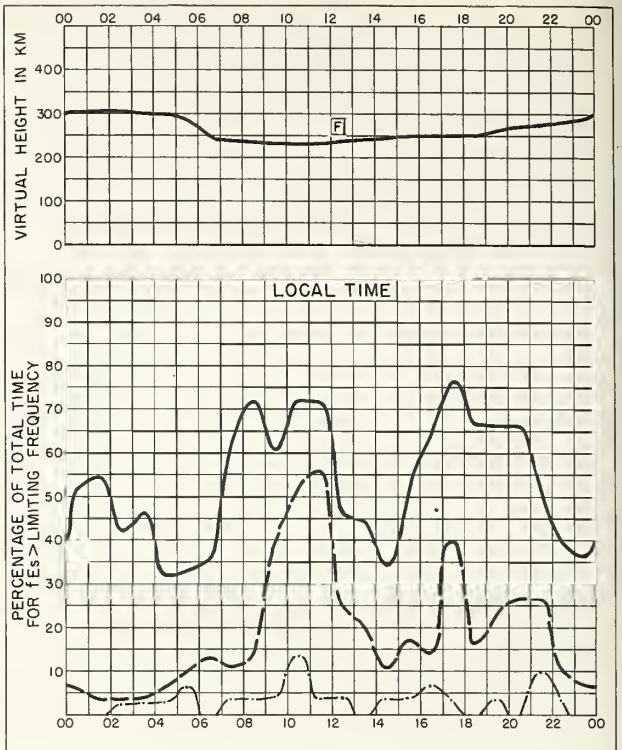


Fig. 62. WAKKANAI, JAPAN OCTOBER 1957

NBS 490

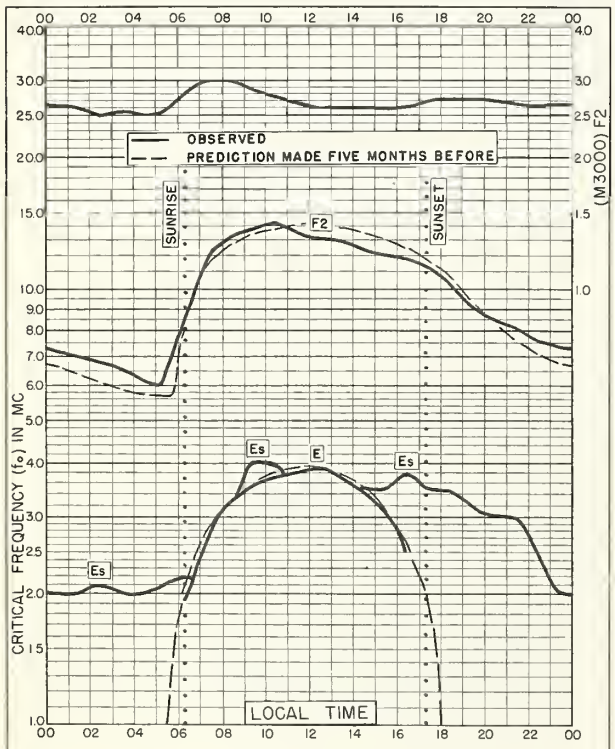


Fig. 63. AKITA, JAPAN
39.7°N, 140.1°E OCTOBER 1957

NBS 503

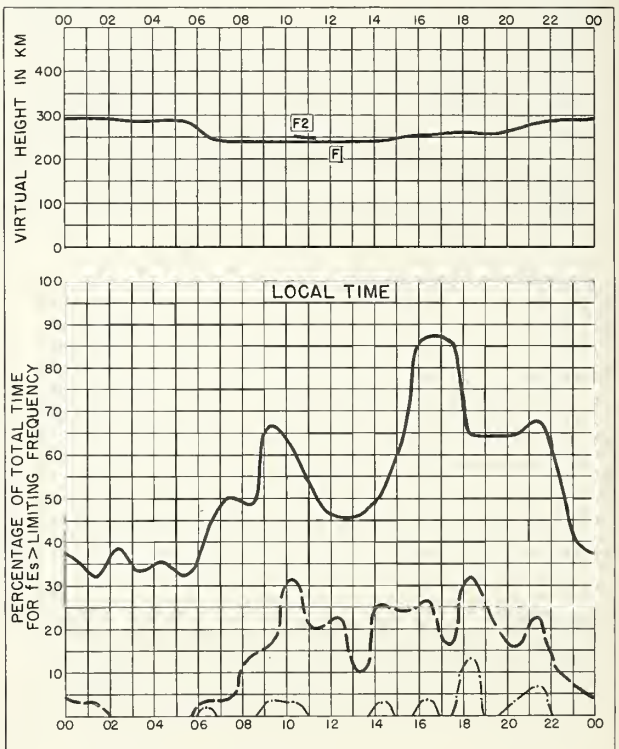


Fig. 64. AKITA, JAPAN OCTOBER 1957

NBS 490

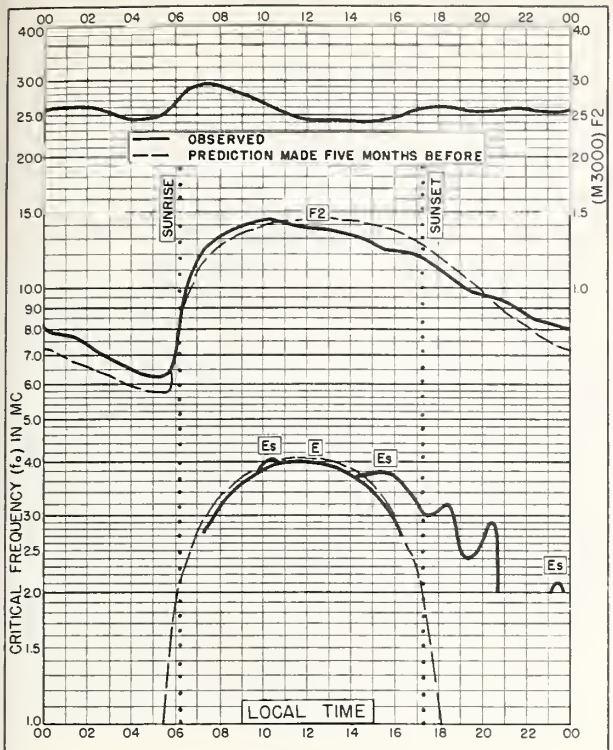


Fig. 65. TOKYO, JAPAN
35.7°N, 139.5°E OCTOBER 1957

NBS 503

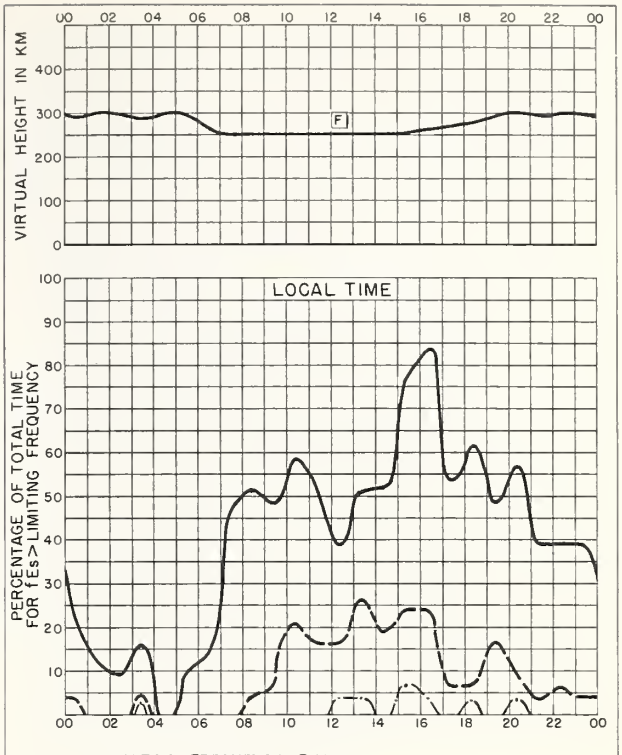


Fig. 66. TOKYO, JAPAN OCTOBER 1957

NBS 490

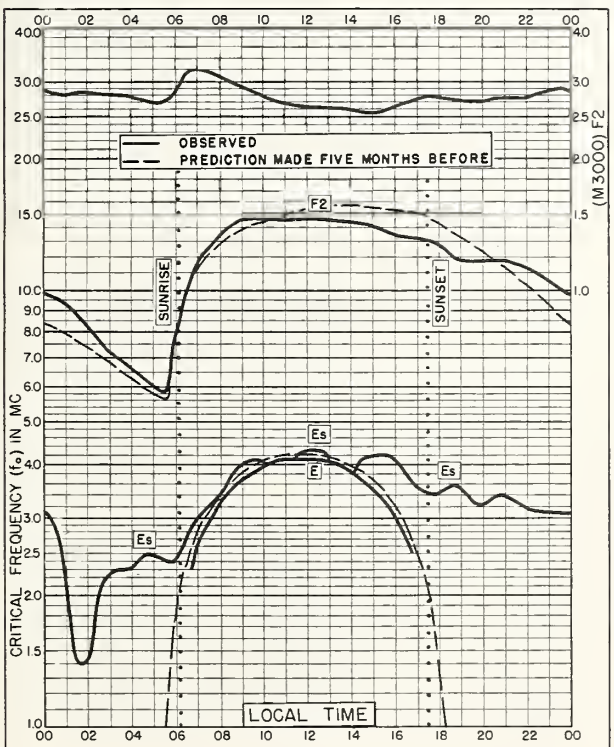


Fig. 67. YAMAGAWA, JAPAN
31.2°N, 130.6°E OCTOBER 1957

NBS 503

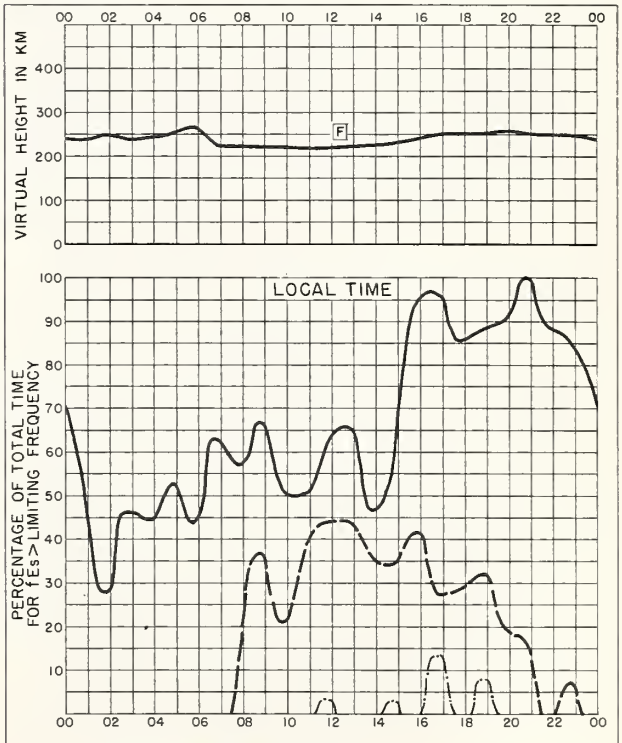


Fig. 68. YAMAGAWA, JAPAN OCTOBER 1957

NBS 490

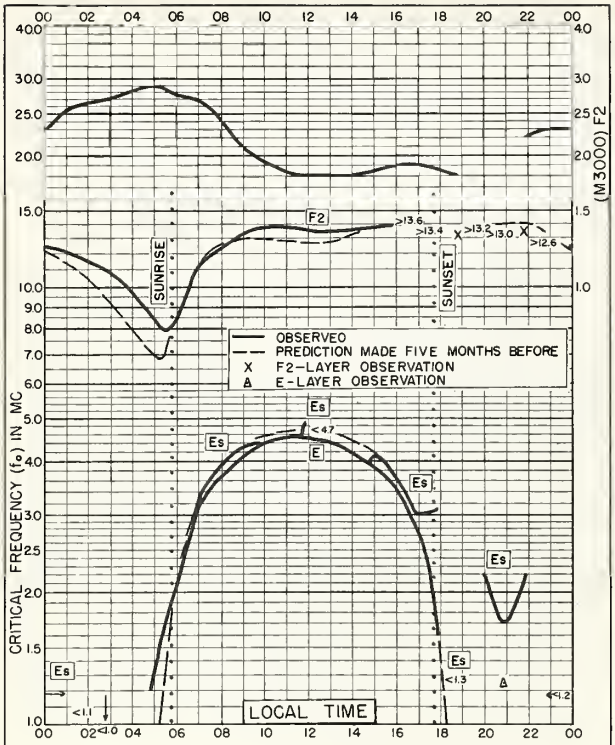


Fig. 69. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E OCTOBER 1957

NBS 503

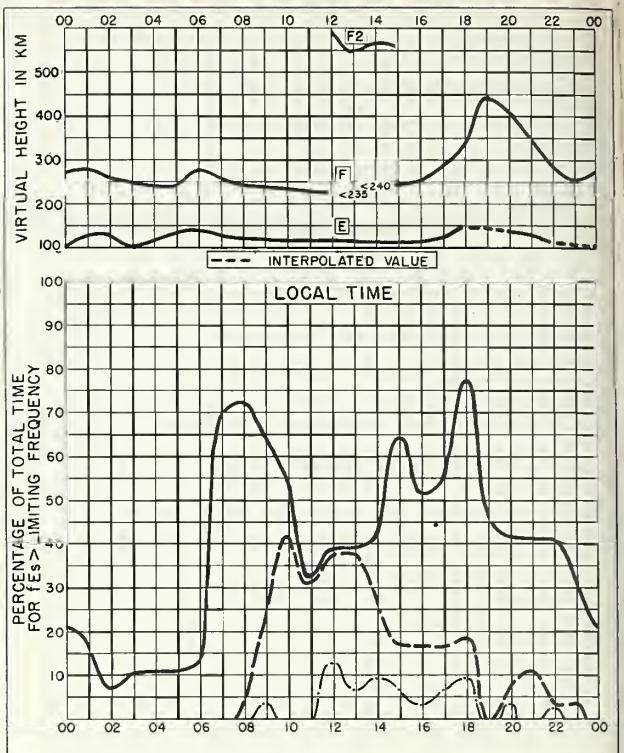


Fig. 70. SINGAPORE, BRITISH MALAYA OCTOBER 1957

NBS 490

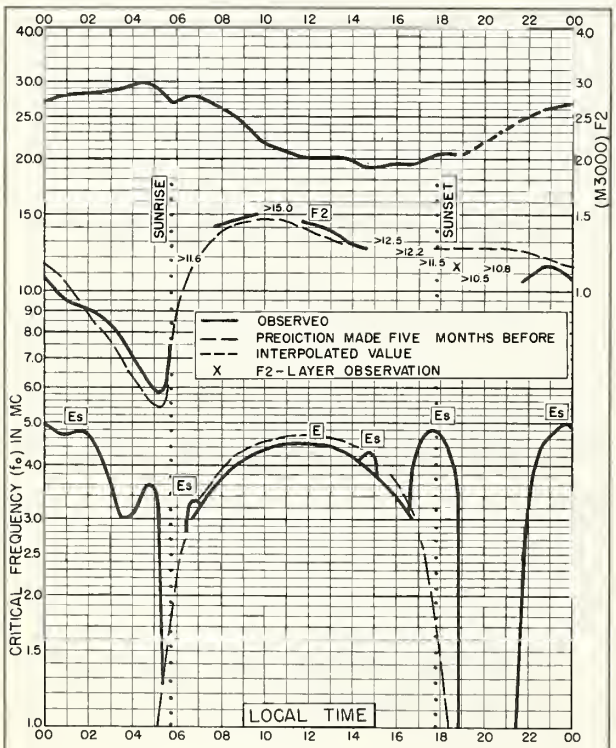


Fig. 71. CHICLAYO, PERU
6.8°S, 79.8°W OCTOBER 1957

NBS 503

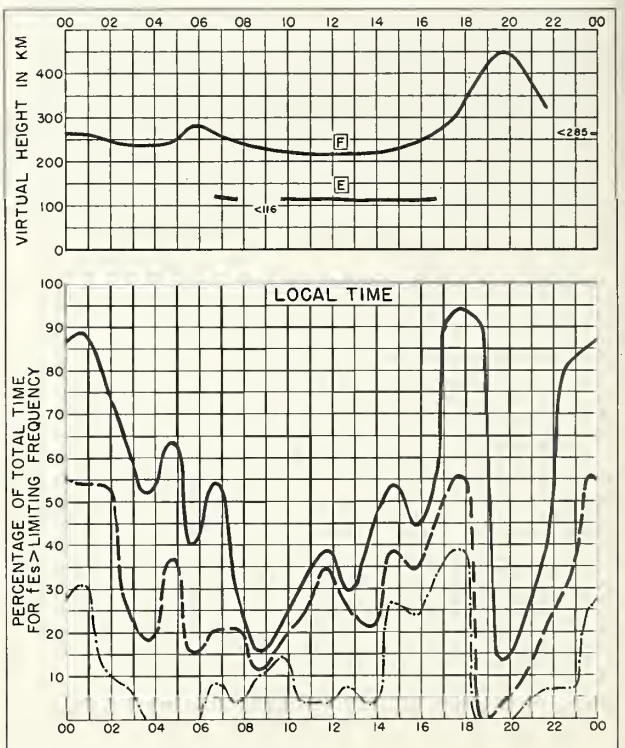


Fig. 72. CHICLAYO, PERU OCTOBER 1957

NBS 490

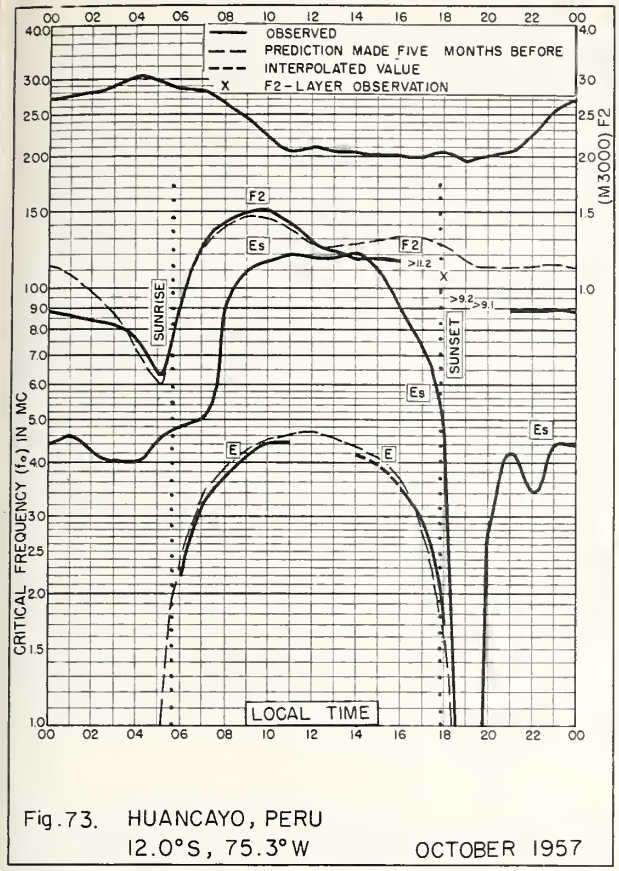


Fig. 73. HUANCAYO, PERU
12.0°S, 75.3°W OCTOBER 1957

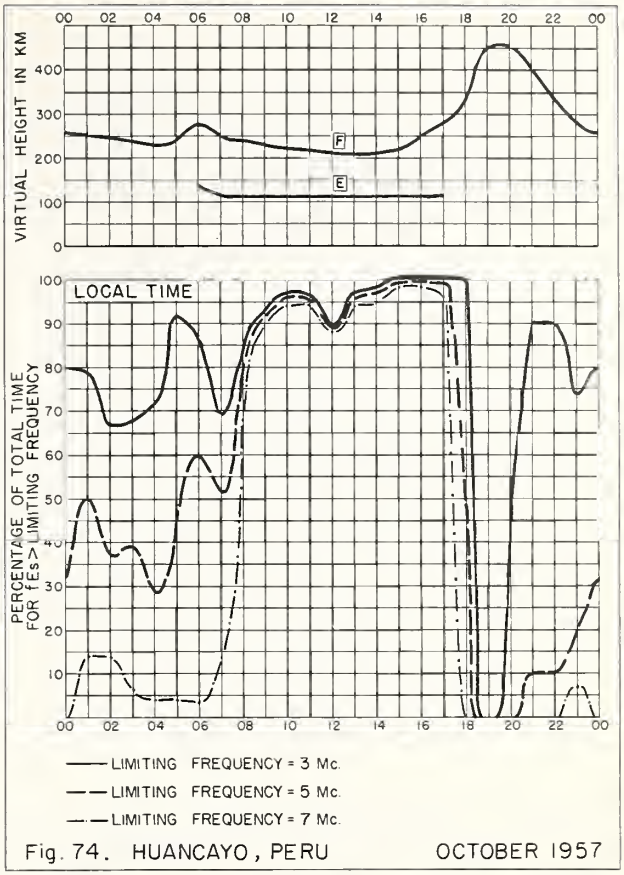


Fig. 74. HUANCAYO, PERU OCTOBER 1957

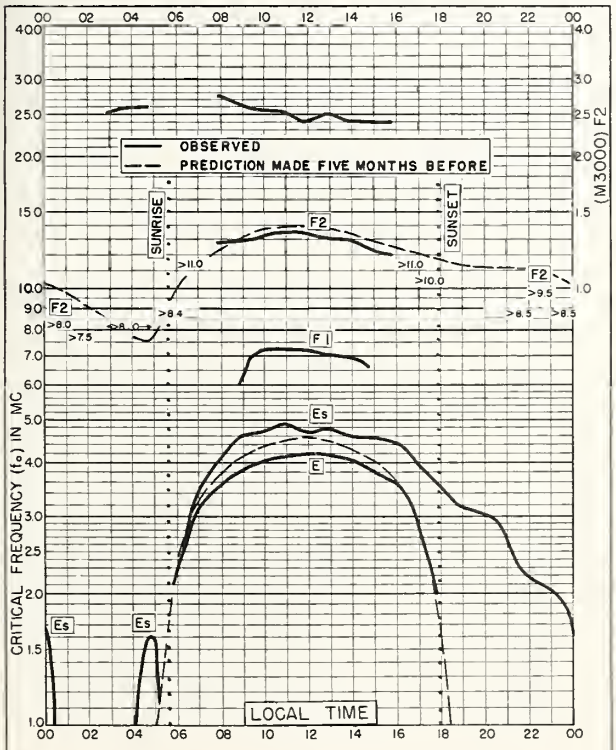


Fig. 75. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E OCTOBER 1957

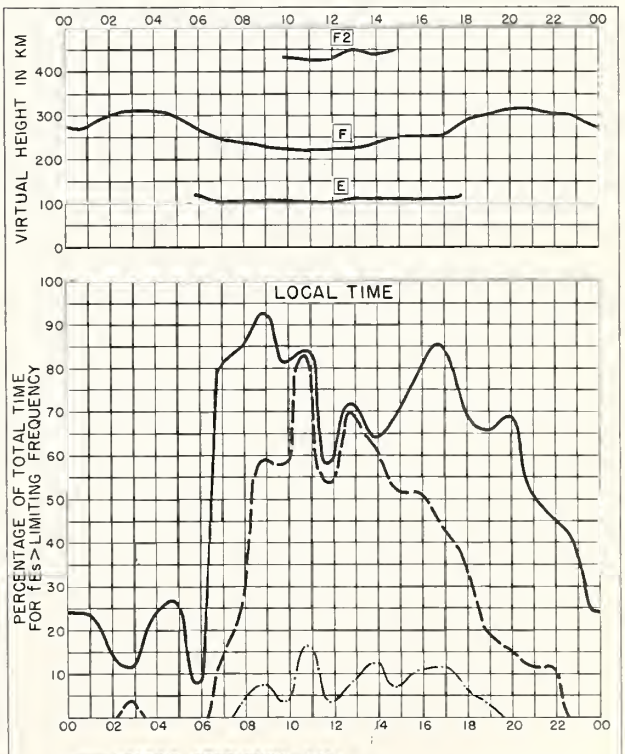


Fig. 76. TOWNSVILLE, AUSTRALIA OCTOBER 1957

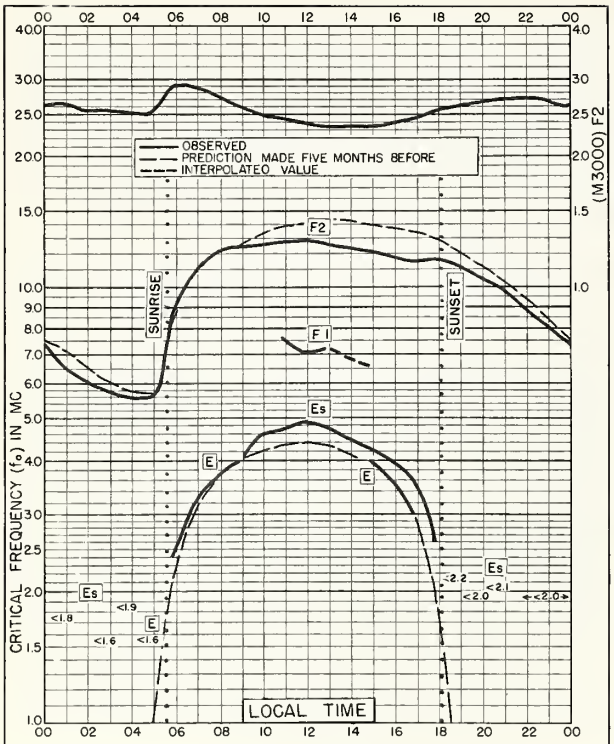
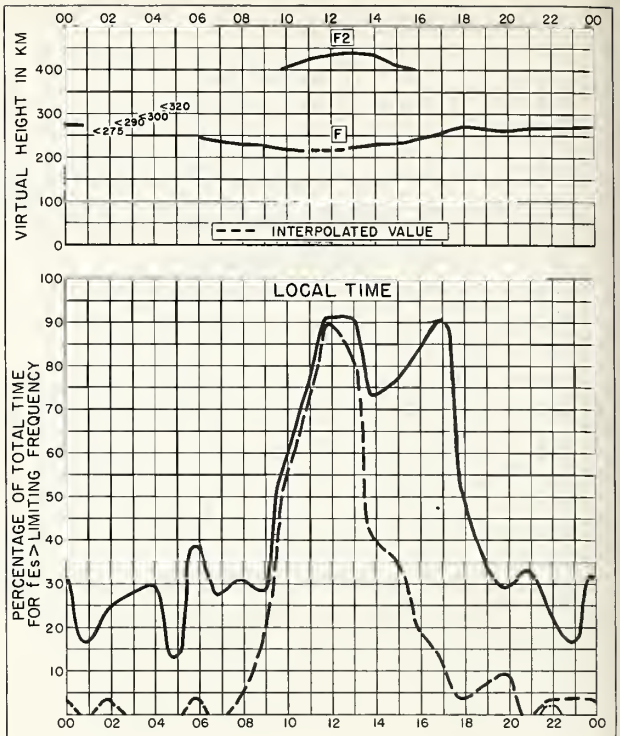


Fig. 77. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.0°E OCTOBER 1957

NBS 503



OCTOBER 1957

Fig. 78. JOHANNESBURG, UNION OF S. AFRICA

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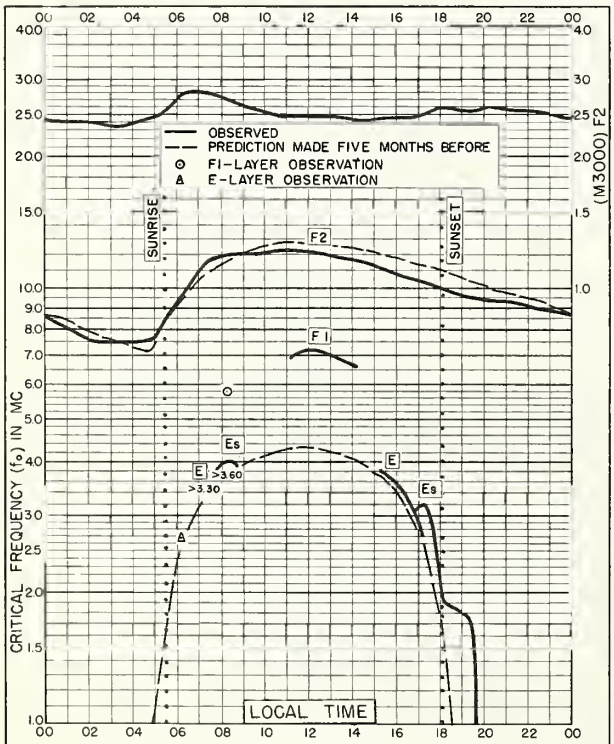
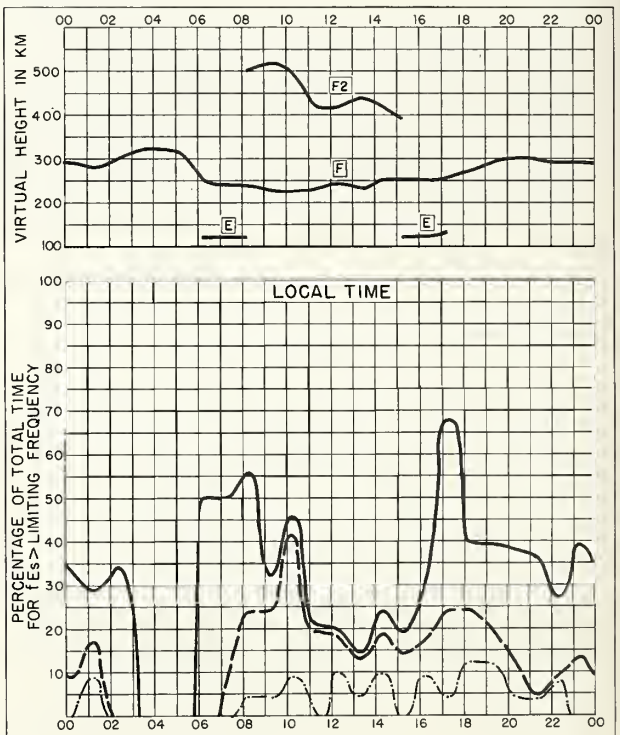


Fig. 79. BRISBANE, AUSTRALIA
27.5°S, 152.9°E OCTOBER 1957

NBS 503



OCTOBER 1957

Fig. 80. BRISBANE, AUSTRALIA

Commerce-Standards-Boulder, Colo.

NBS 490

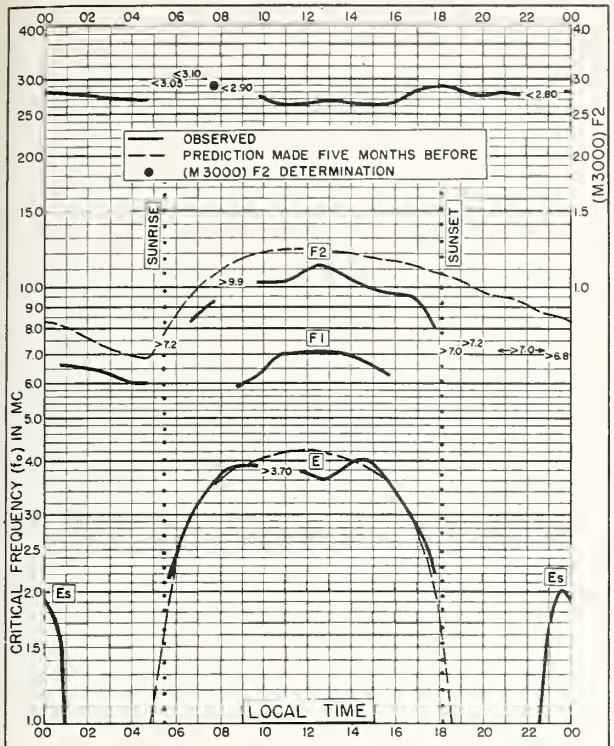


Fig. 81. WATHEROO, W. AUSTRALIA
30.3°S, 115.9°E OCTOBER 1957

NBS 503

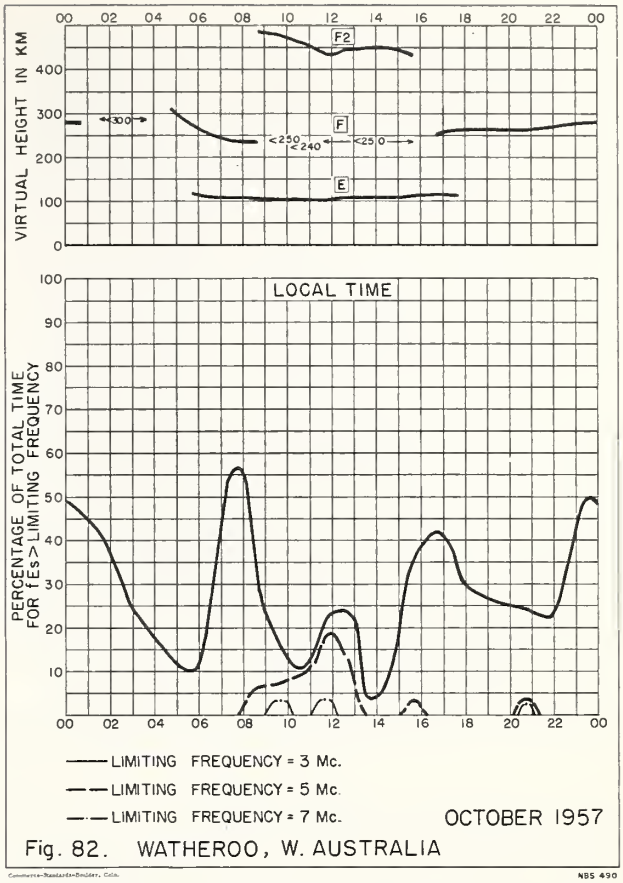


Fig. 82. WATHEROO, W. AUSTRALIA OCTOBER 1957

NBS 490

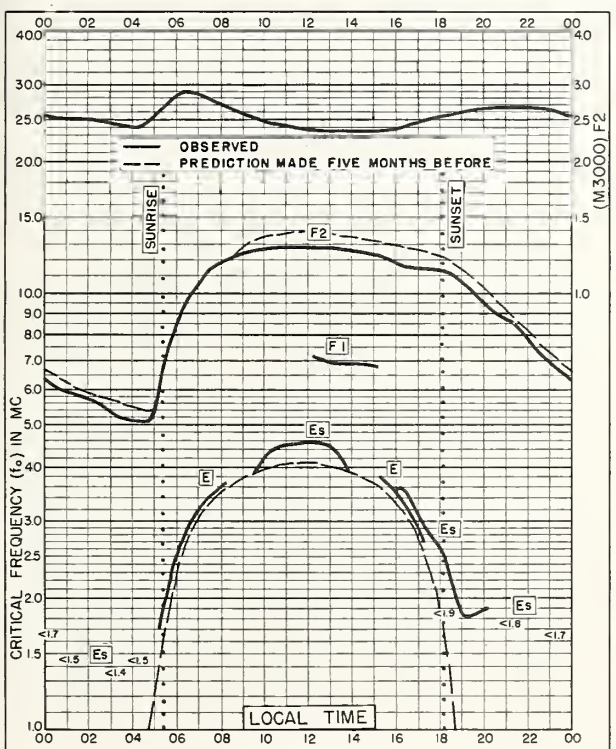


Fig. 83. CAPETOWN, UNION OF S. AFRICA
34.1°S, 18.3°E OCTOBER 1957

NBS 503

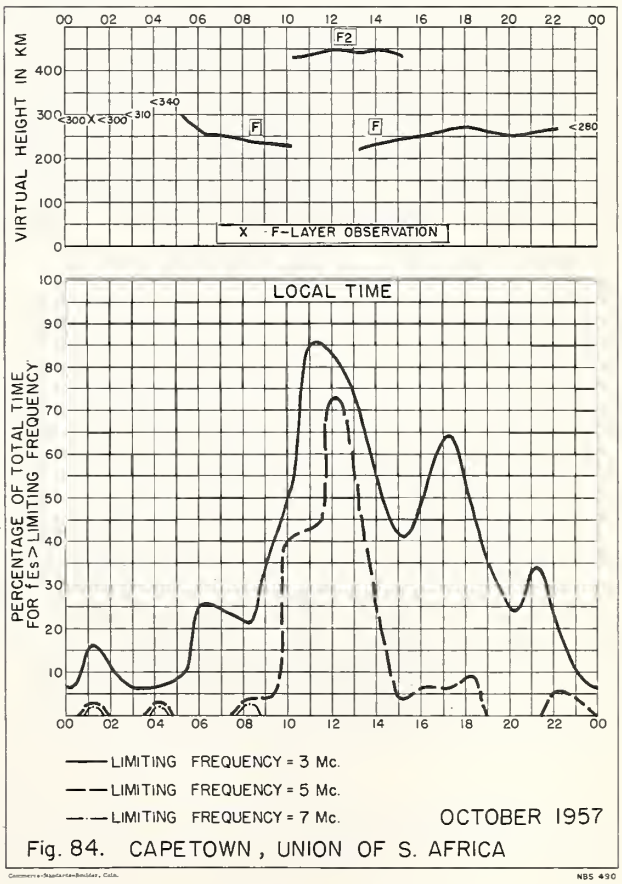


Fig. 84. CAPETOWN, UNION OF S. AFRICA OCTOBER 1957

NBS 490

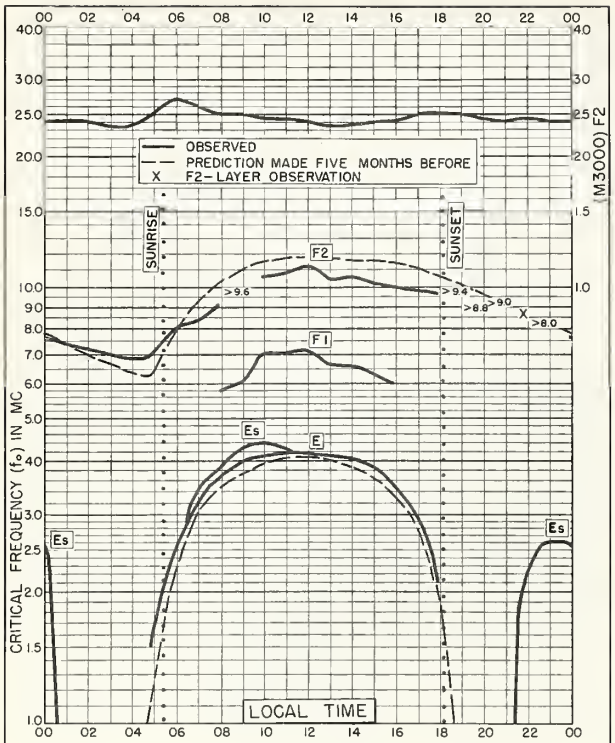


Fig. 85. CANBERRA, AUSTRALIA
35.3°S, 149.0°E OCTOBER 1957

NBS 503

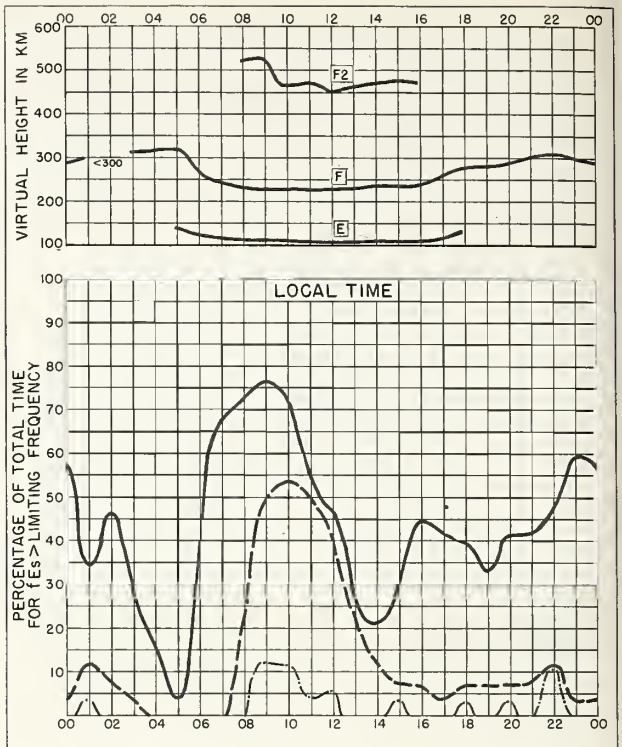


Fig. 86. CANBERRA, AUSTRALIA OCTOBER 1957

NBS 490

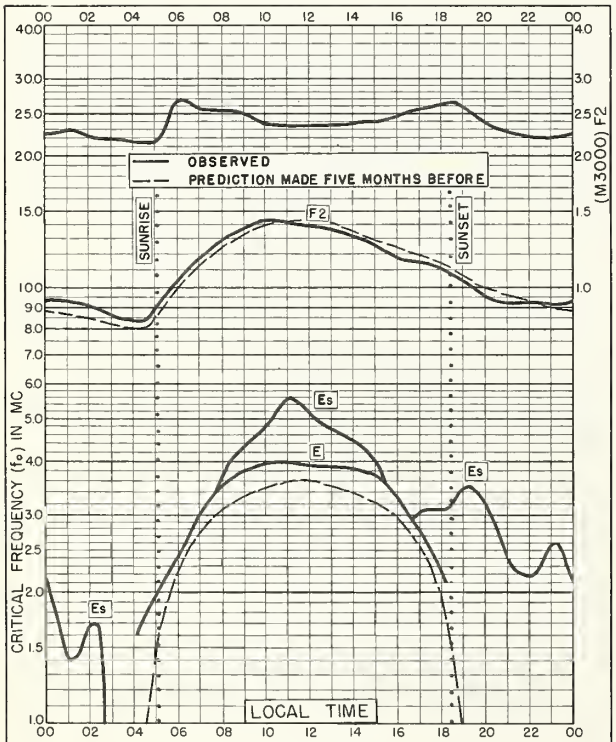


Fig. 87. FALKLAND IS.
51.7°S, 57.8° W OCTOBER 1957

NBS 503

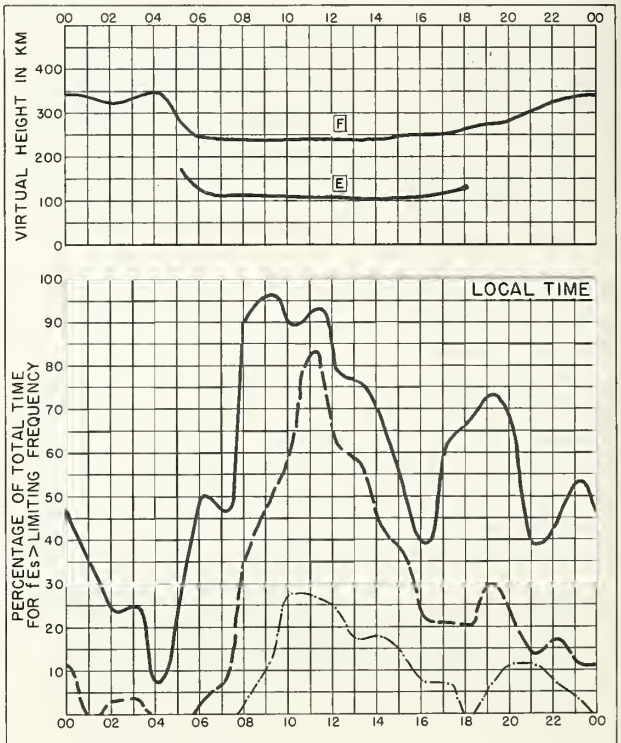


Fig. 88. FALKLAND IS. OCTOBER 1957

NBS 490

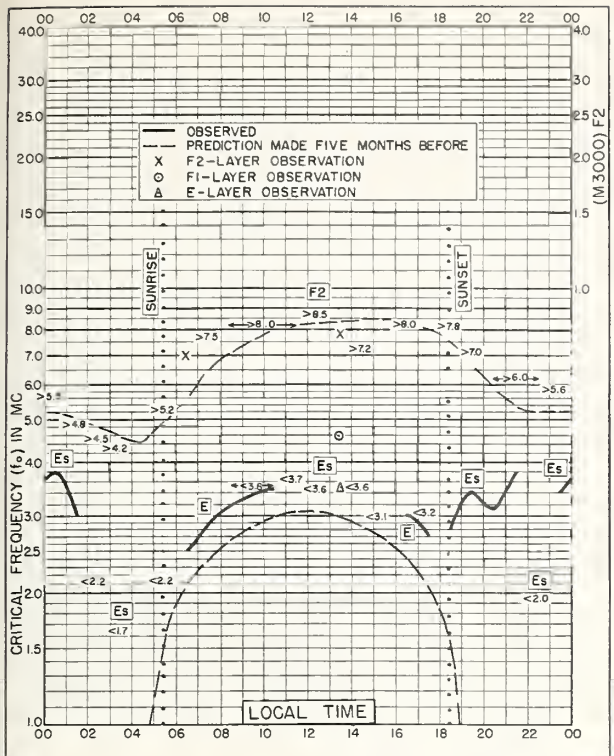


Fig. 89. LULEA, SWEDEN
65.6°N, 22.1°E SEPTEMBER 1957

NBS 503

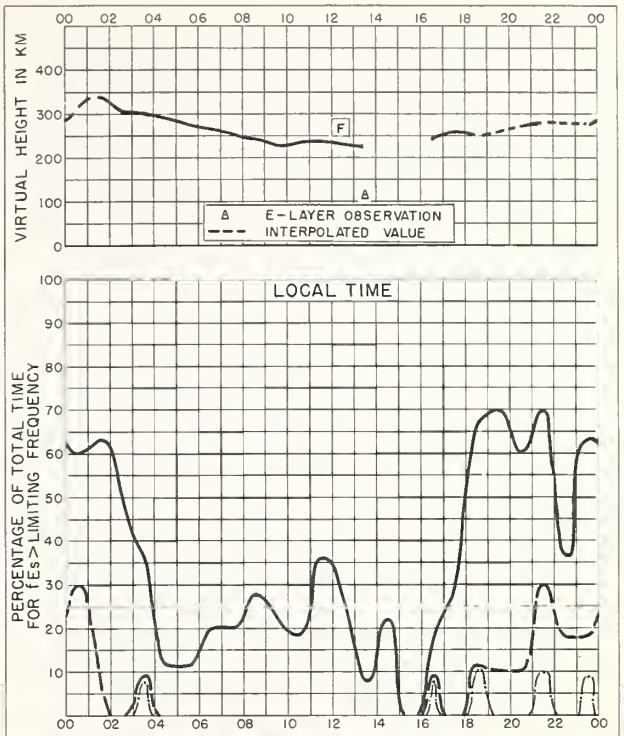


Fig. 90. LULEA, SWEDEN SEPTEMBER 1957

NBS 490

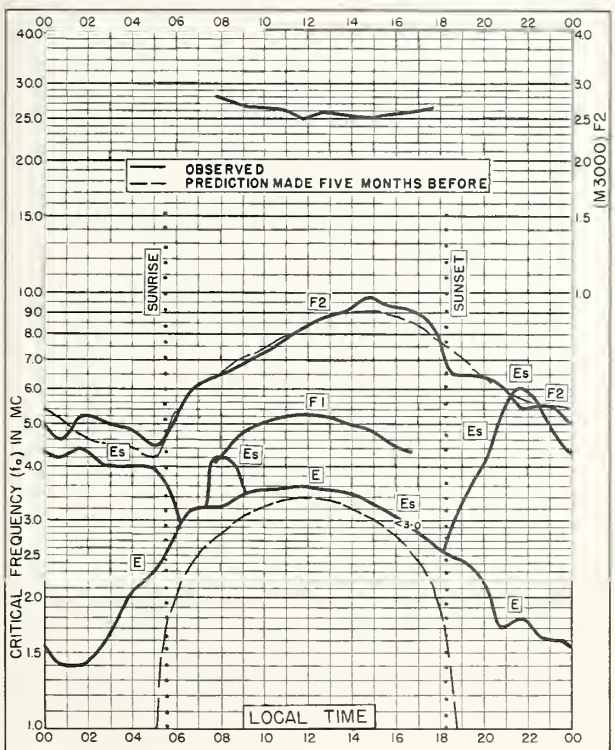


Fig. 91. CHURCHILL, CANADA
58.8°N, 94.2°W SEPTEMBER 1957

NBS 503

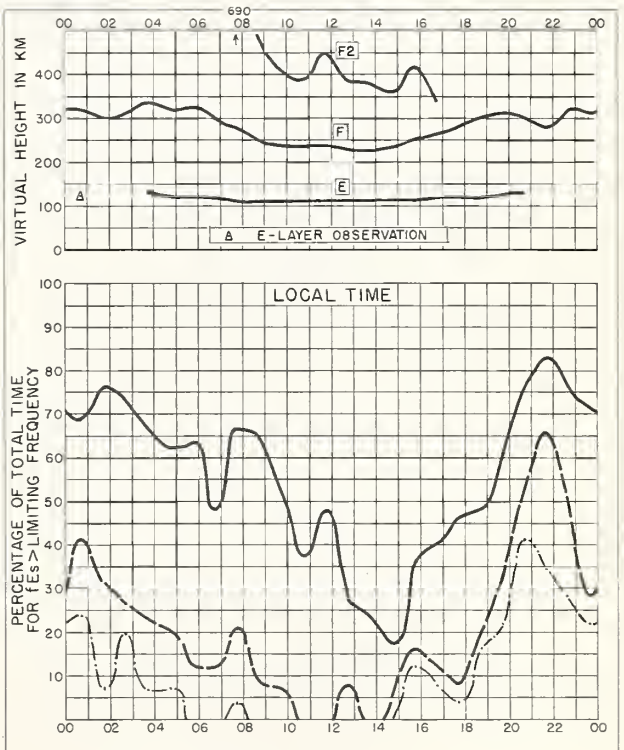


Fig. 92. CHURCHILL, CANADA SEPTEMBER 1957

NBS 490

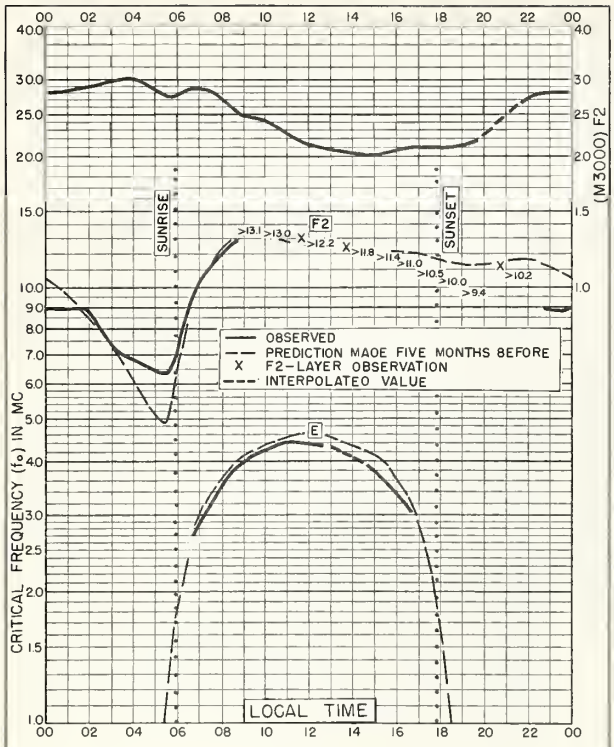


Fig. 93. CHICLAYO, PERU
6.8°S, 79.8°W SEPTEMBER 1957

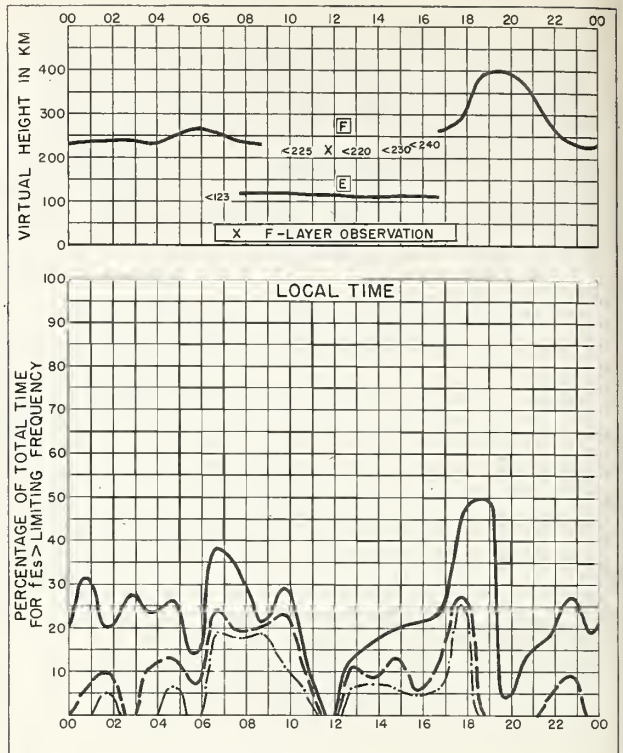


Fig. 94. CHICLAYO, PERU SEPTEMBER 1957

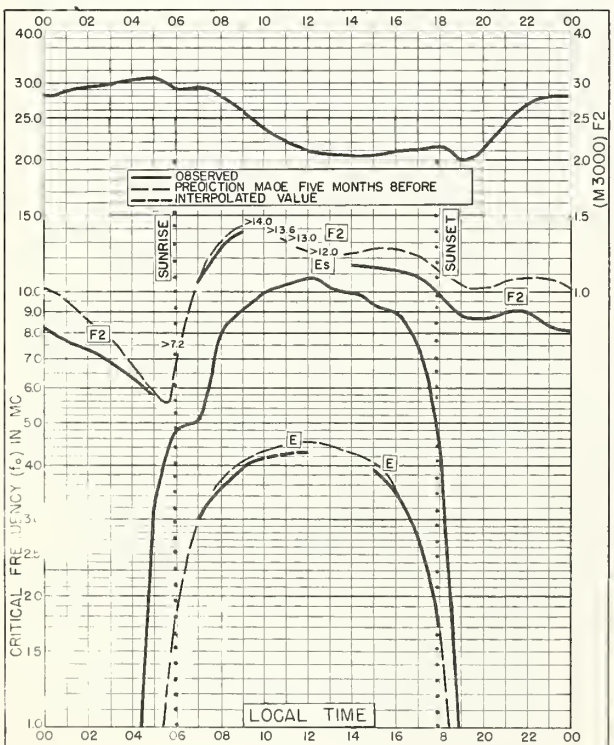


Fig. 95. HUANCAYO, PERU
12.0°S, 75.3°W SEPTEMBER 1957

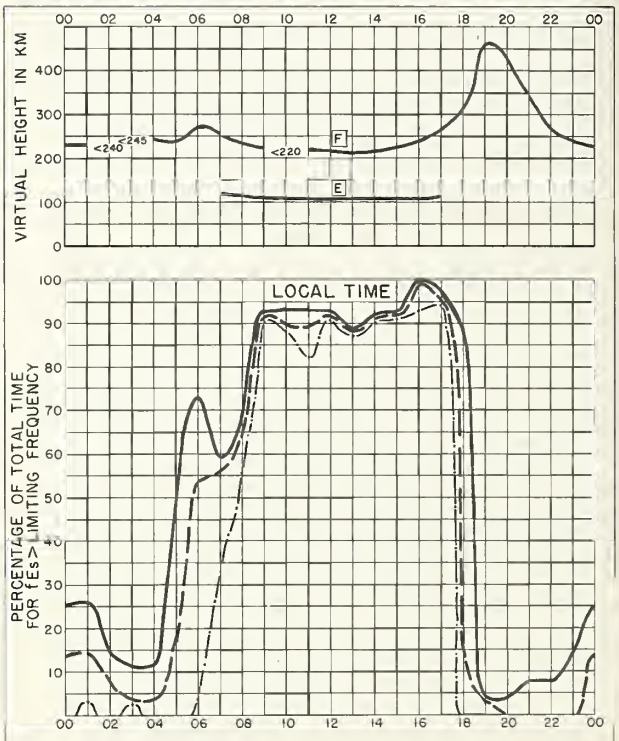


Fig. 96. HUANCAYO, PERU SEPTEMBER 1957

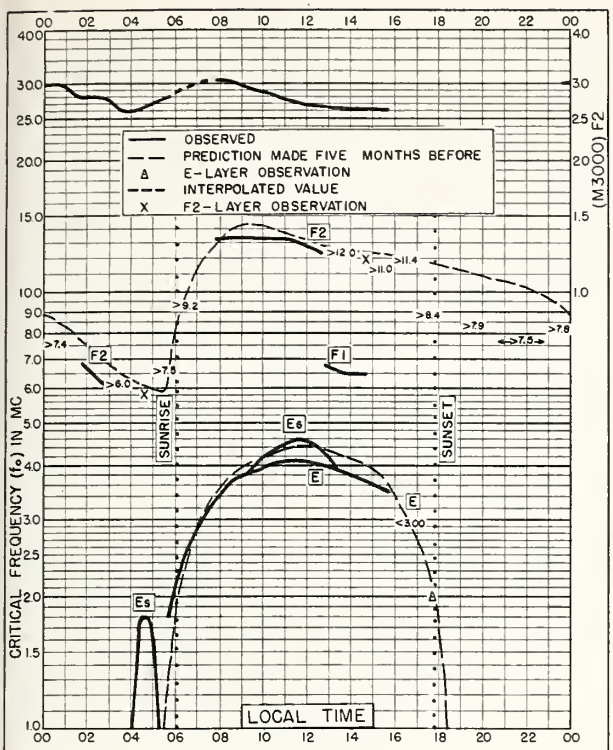
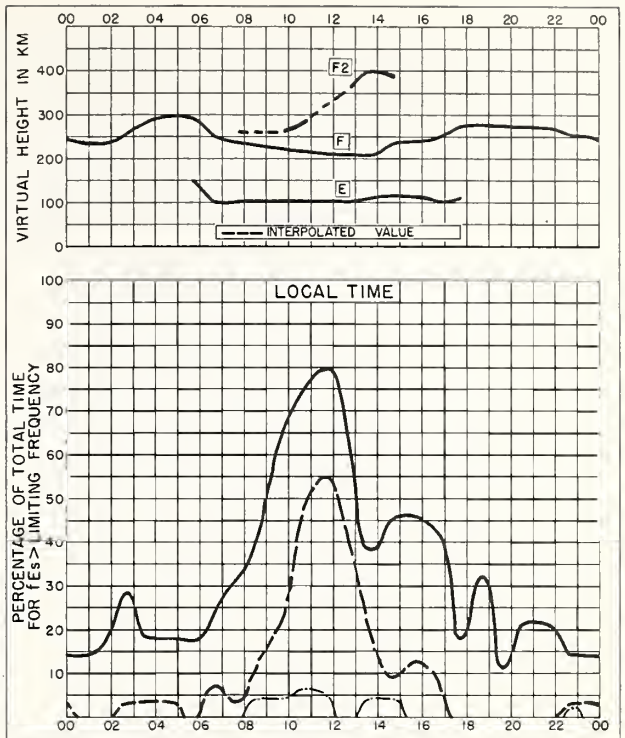


Fig. 97. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E SEPTEMBER 1957

NBS 503



SEPTEMBER 1957

Fig. 98. TOWNSVILLE, AUSTRALIA

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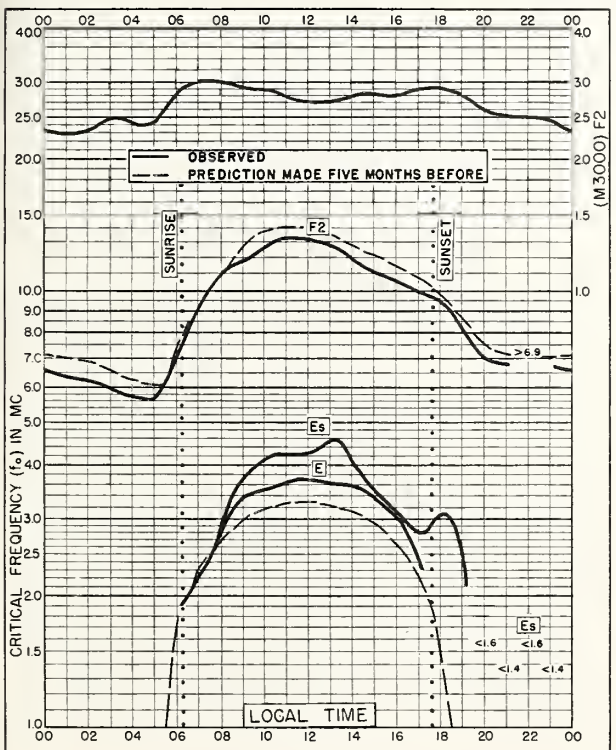


Fig. 99. FALKLAND IS.
51.7°S, 57.8°W SEPTEMBER 1957

NBS 503

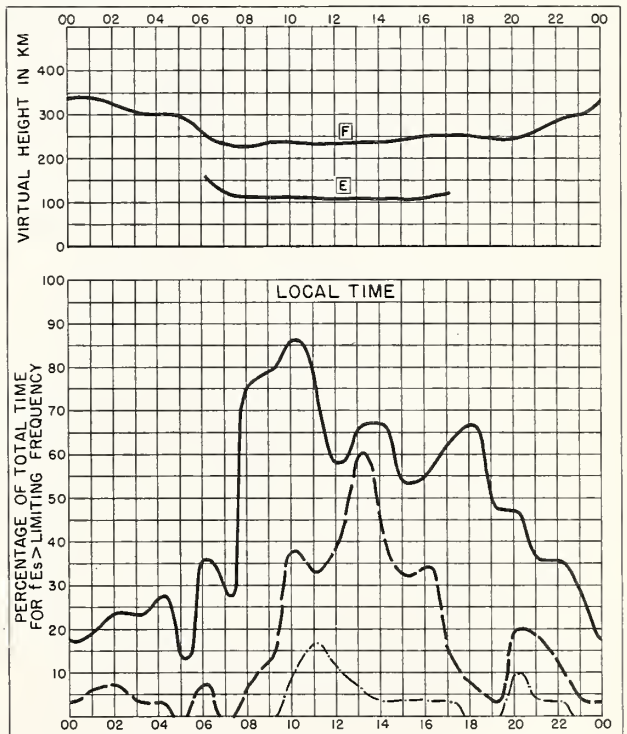


Fig. 100. FALKLAND IS. SEPTEMBER 1957

Commerce-Standards-Boulder, Colo. NBS 490

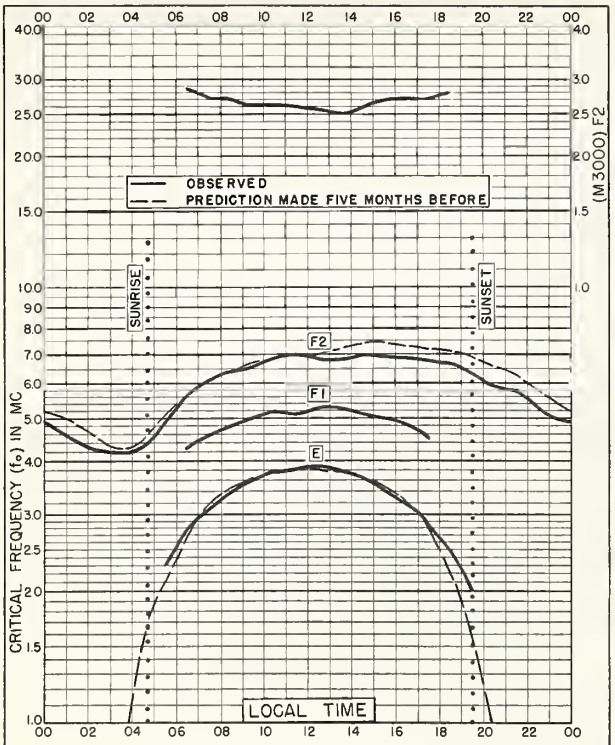


Fig. 101. MEANOOK, CANADA
54.6°N, 113.3°W AUGUST 1957

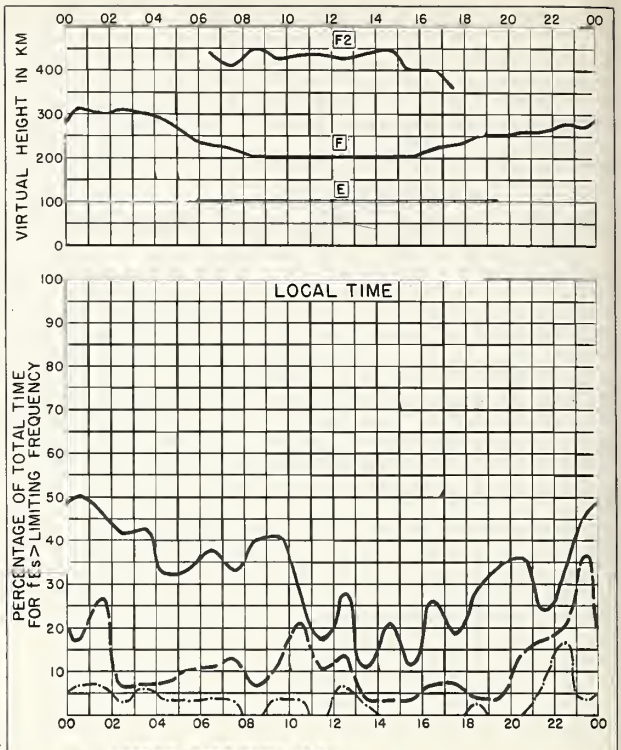


Fig. 102. MEANOOK, CANADA AUGUST 1957

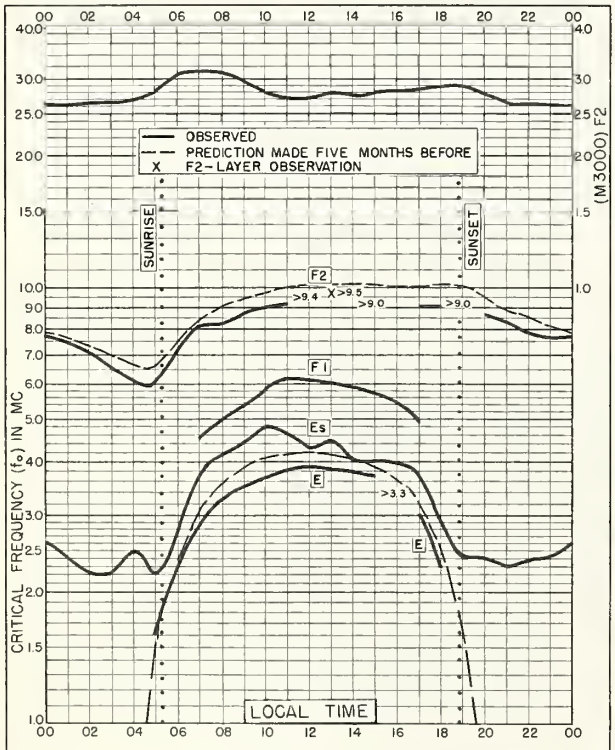


Fig. 103. TORTOSA, SPAIN
40.8°N, 0.5°E AUGUST 1957

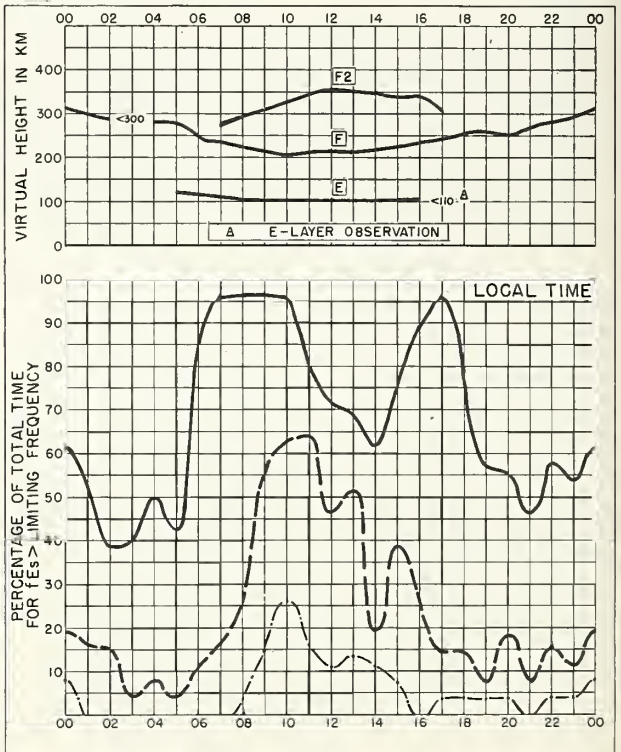


Fig. 104. TORTOSA, SPAIN AUGUST 1957

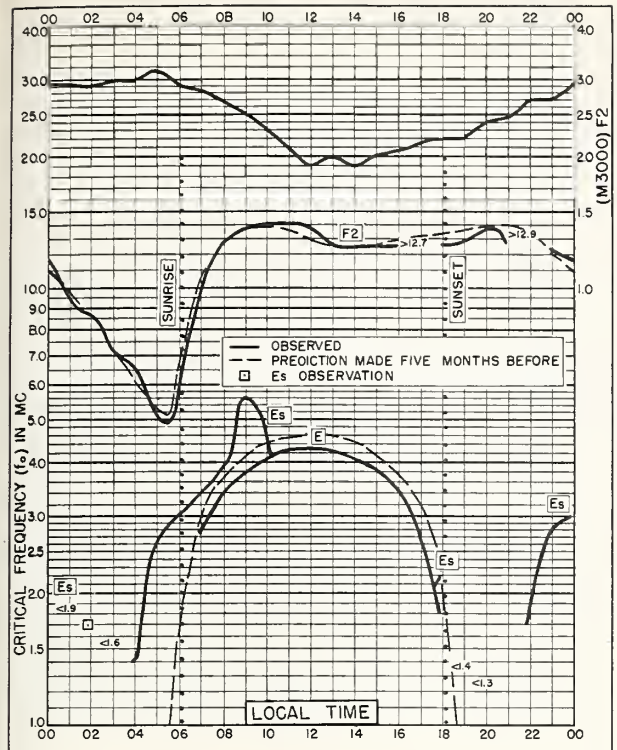
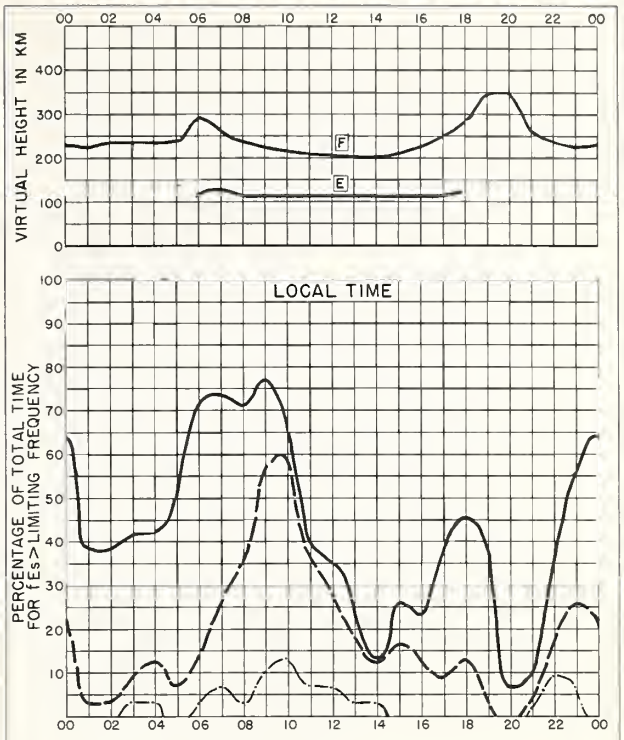


Fig. 105. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E AUGUST 1957

NBS 503



AUGUST 1957

Fig. 106. SINGAPORE, BRITISH MALAYA

NBS 490

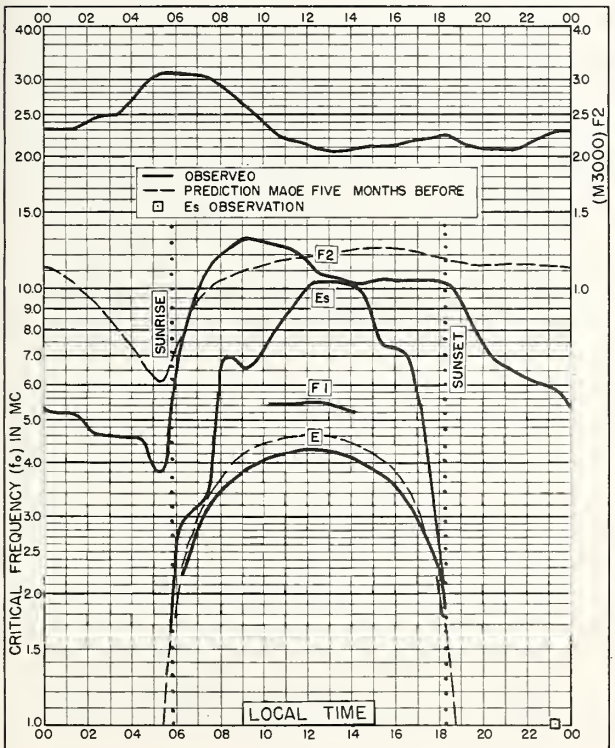


Fig. 107. IBADAN, NIGERIA
7.4°N, 3.9°E JULY 1957

NBS 503

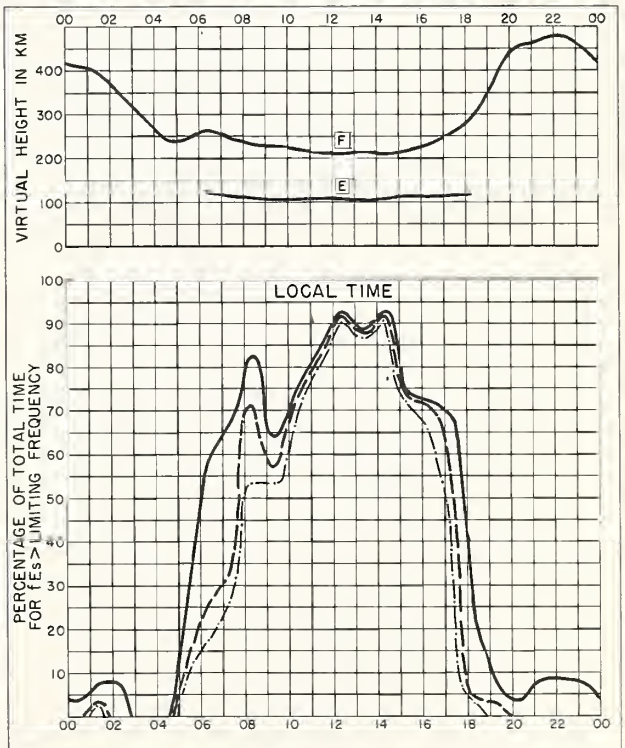


Fig. 108. IBADAN, NIGERIA JULY 1957

NBS 490

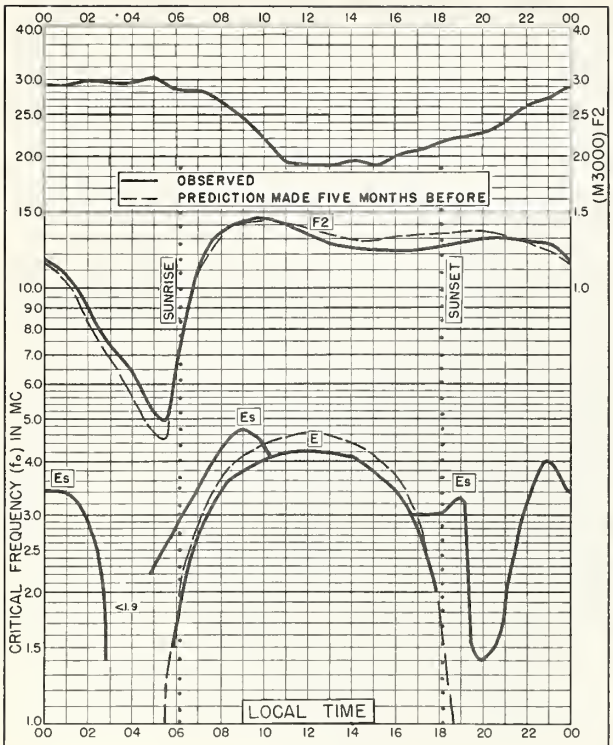


Fig. 109. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E JULY 1957

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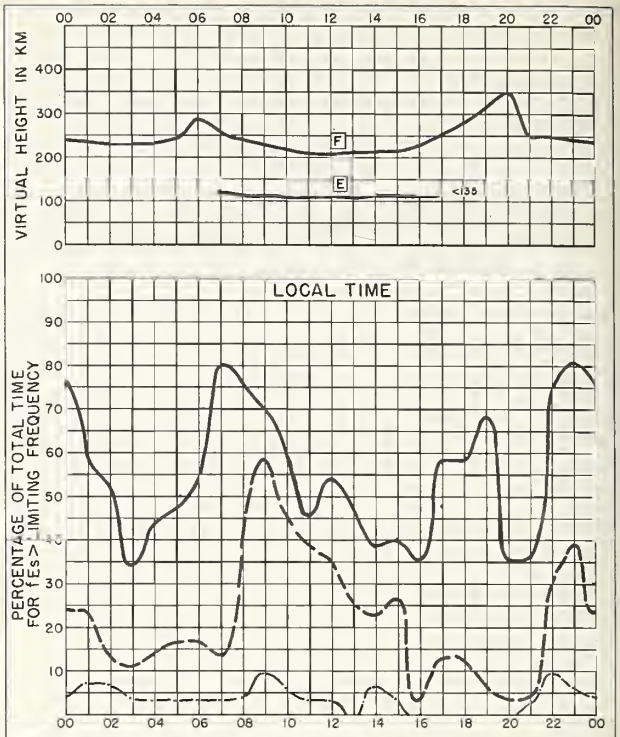

Fig. 110. SINGAPORE, BRITISH MALAYA JULY 1957

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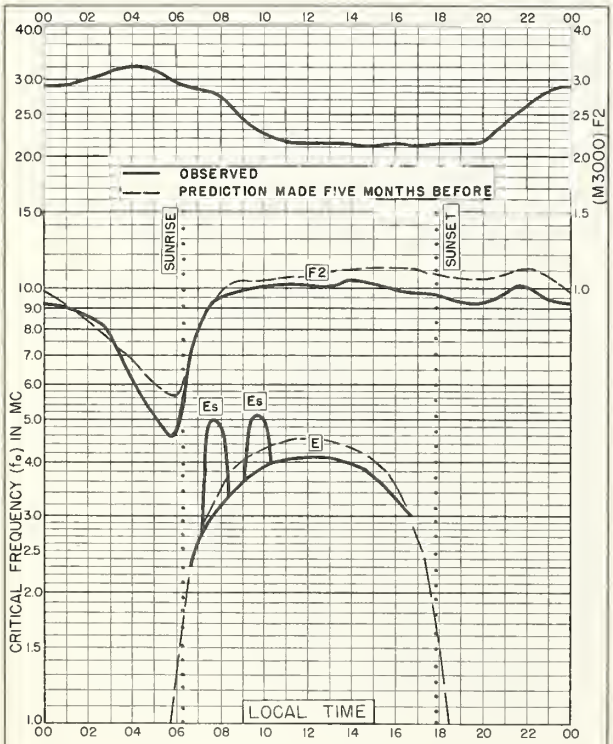

Fig. 111. CHICLAYO, PERU
6.8°S, 79.8°W JULY 1957

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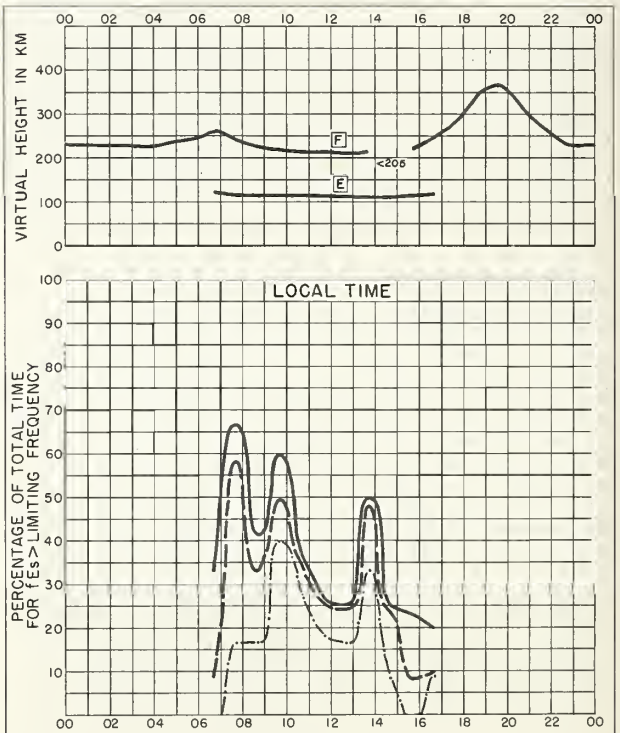

Fig. 112. CHICLAYO, PERU JULY 1957

NBS 490

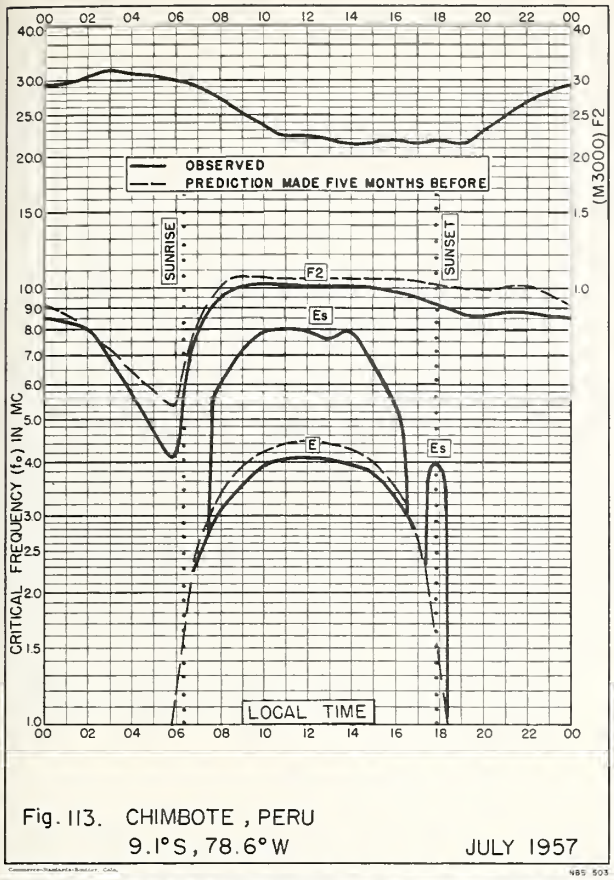

Fig. 113. CHIMBOTE, PERU
9.1°S, 78.6°W JULY 1957

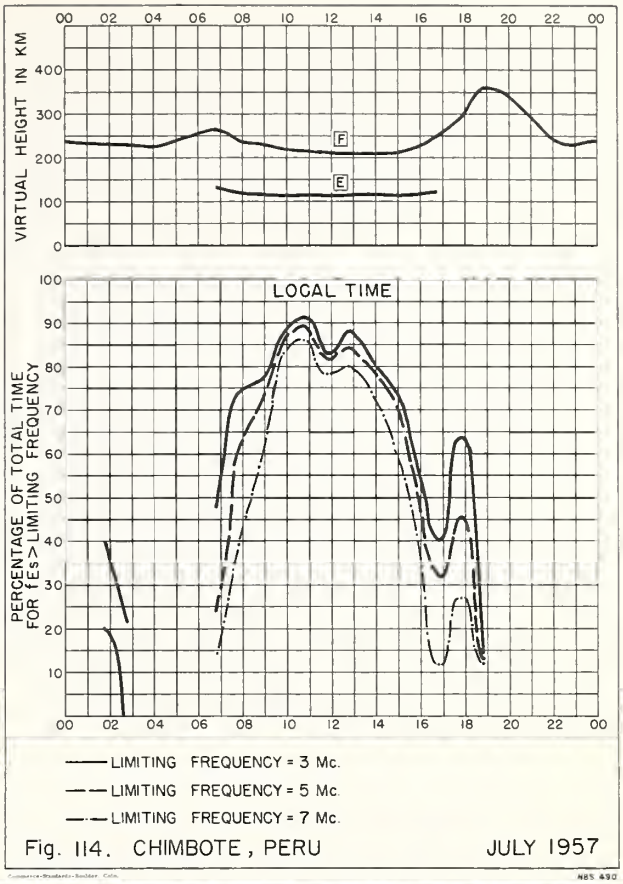

Fig. 114. CHIMBOTE, PERU JULY 1957

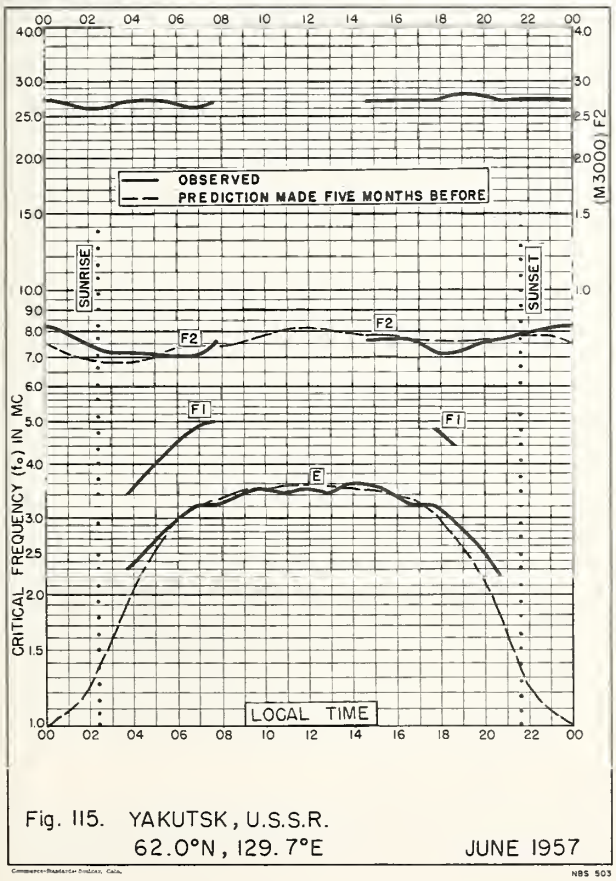

Fig. 115. YAKUTSK, U.S.S.R.
62.0°N, 129.7°E JUNE 1957

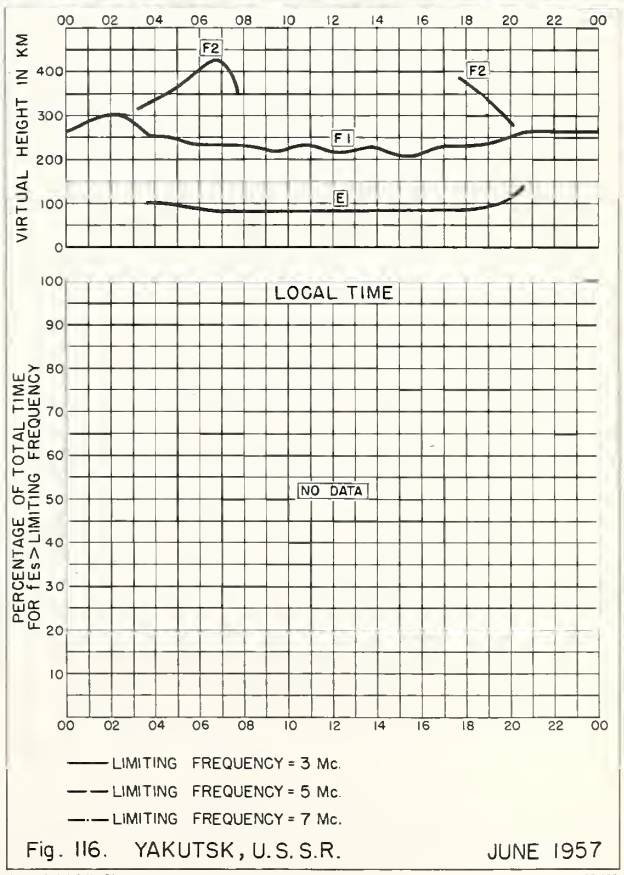

Fig. 116. YAKUTSK, U.S.S.R. JUNE 1957

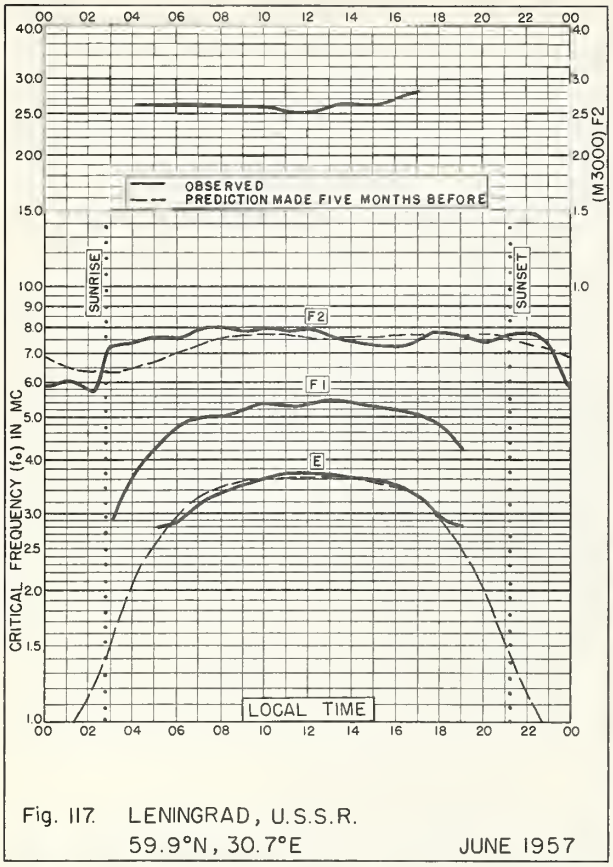

Fig. 117. LENINGRAD, U.S.S.R.
59.9°N, 30.7°E JUNE 1957

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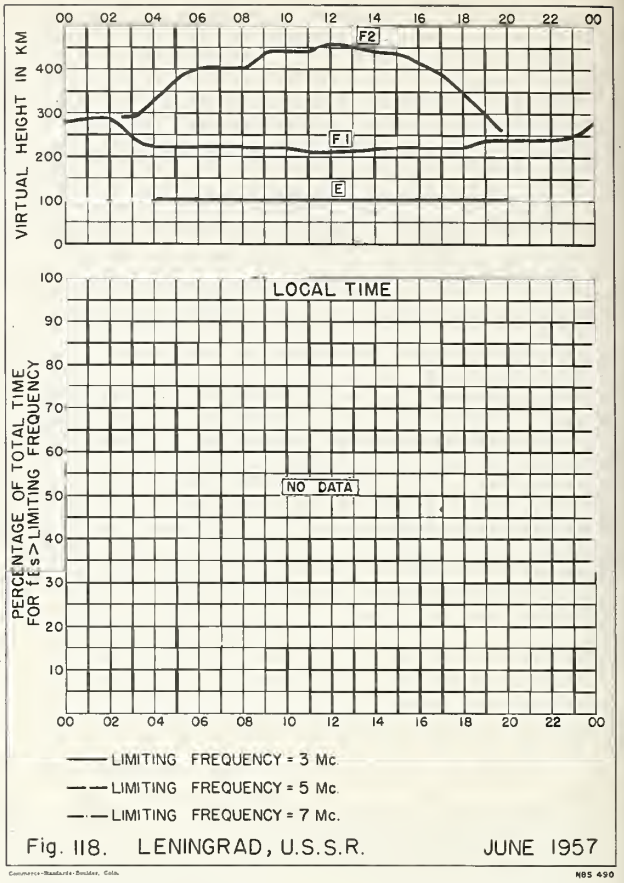

Fig. 118. LENINGRAD, U.S.S.R. JUNE 1957

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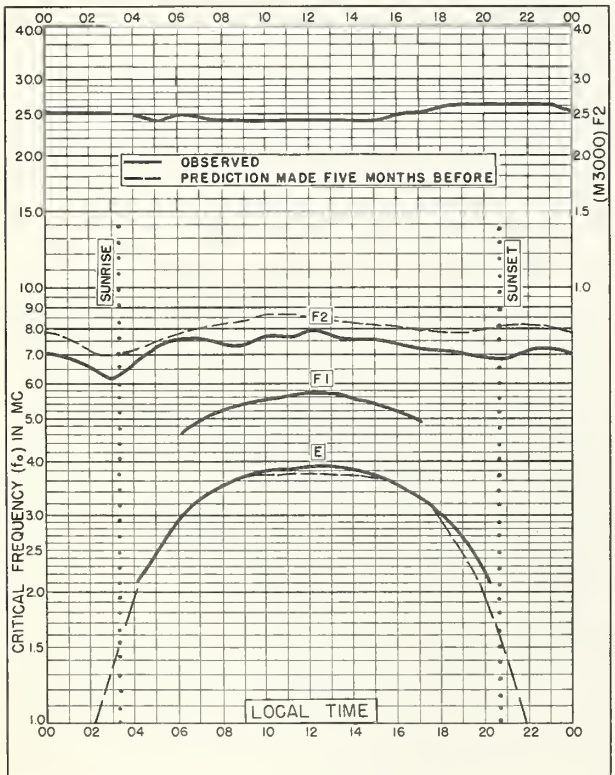

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56.7°N, 61.1°E JUNE 1957

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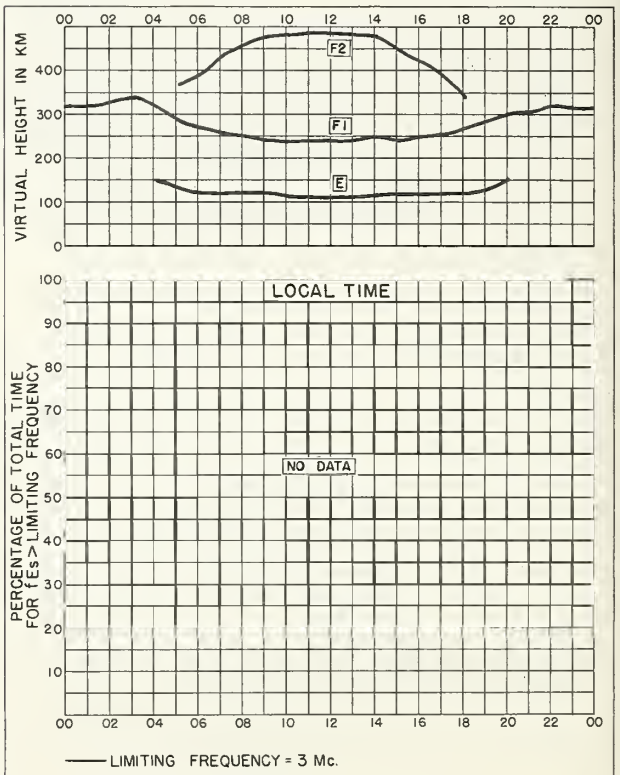

Fig. 120. SVERDLOVSK, U.S.S.R. JUNE 1957

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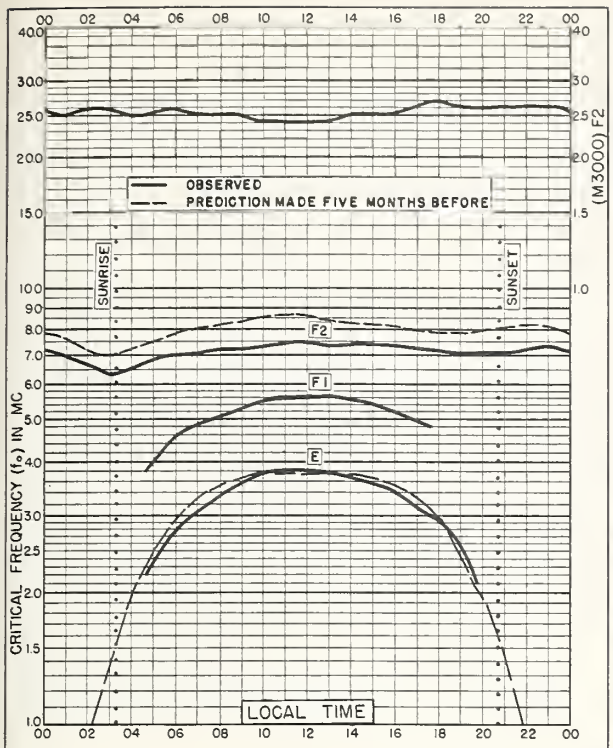

Fig. 121. TOMSK, U.S.S.R.
56.5°N, 84.9°E JUNE 1957

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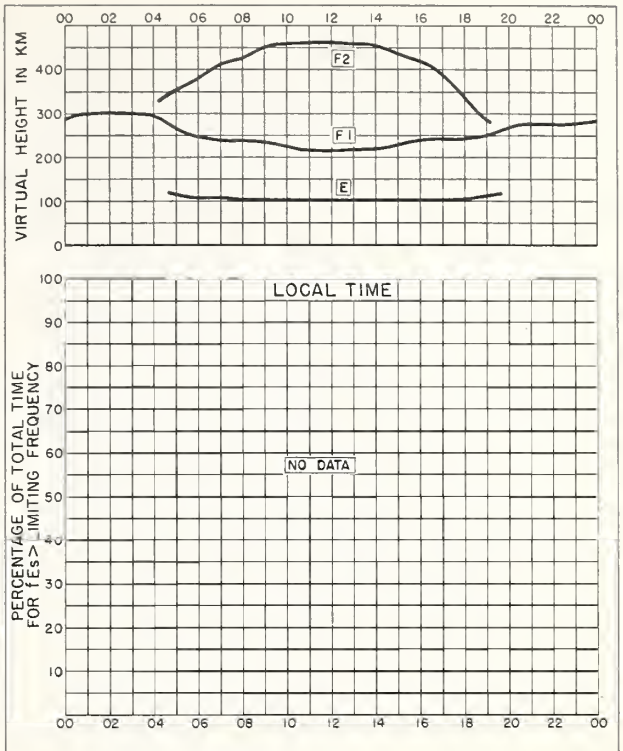

Fig. 122. TOMSK, U.S.S.R. JUNE 1957

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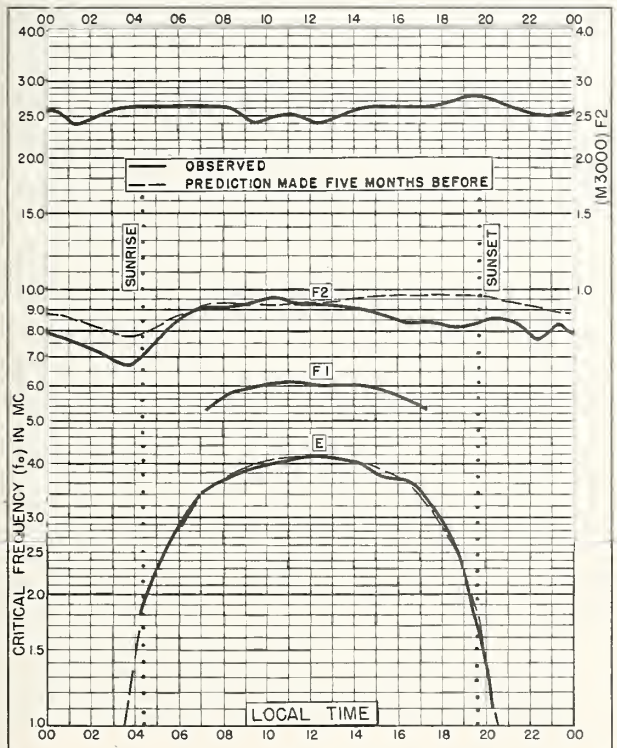

Fig. 123. SIMFEROPOL, U.S.S.R.
44.4°N, 34.0°E JUNE 1957

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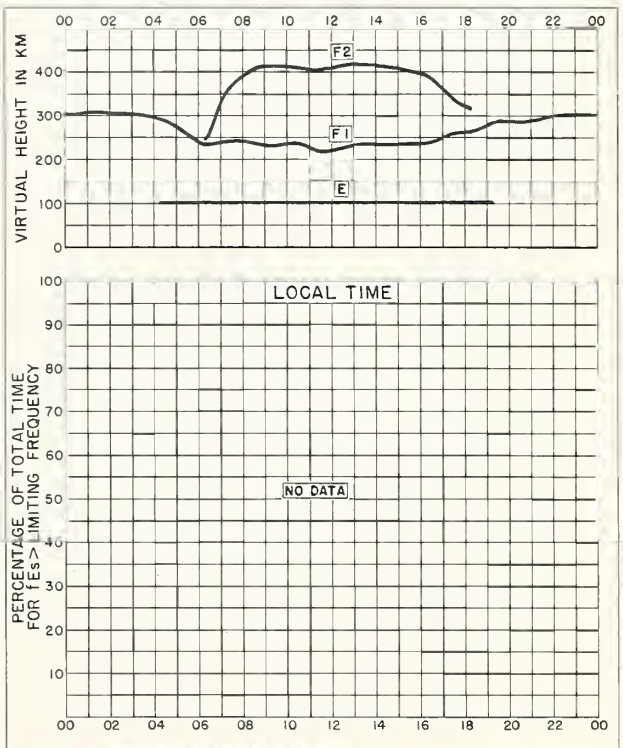

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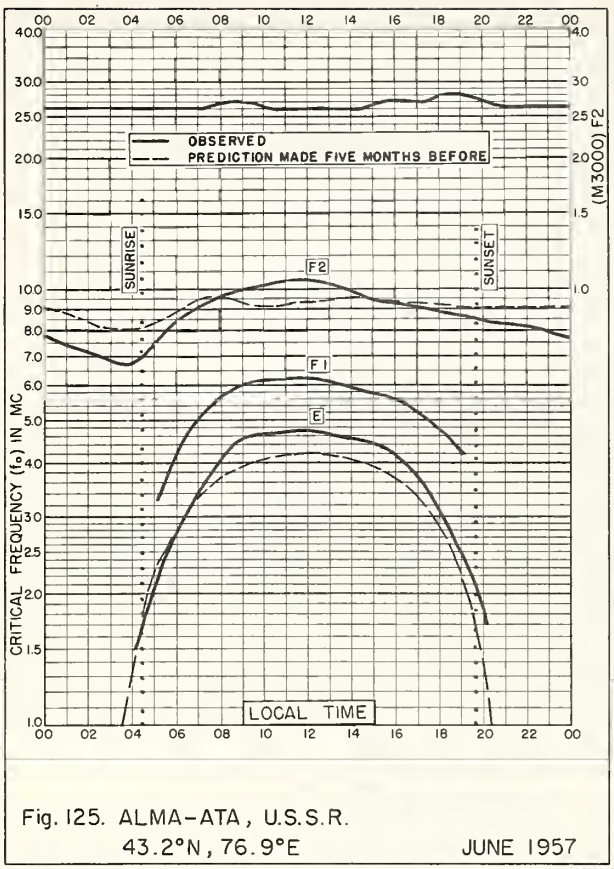

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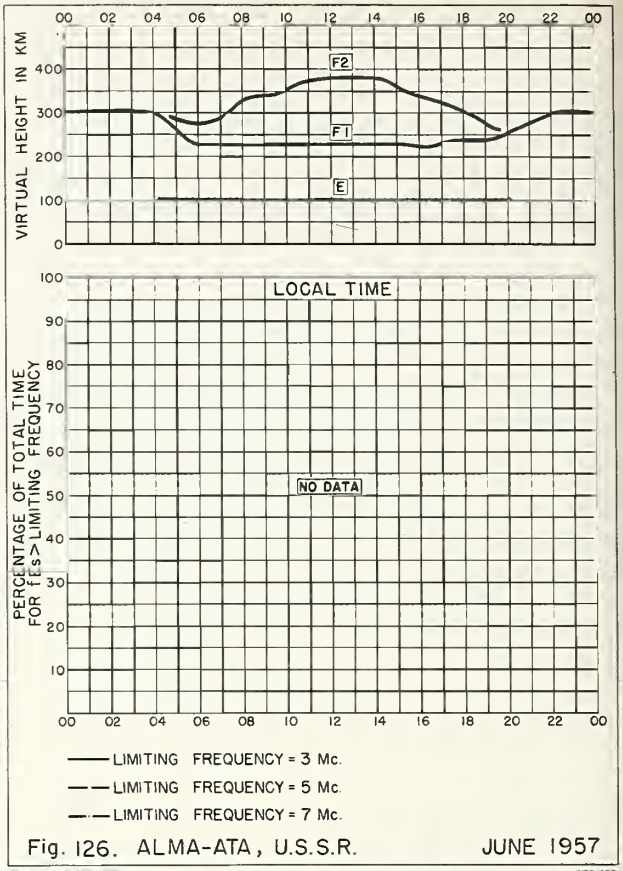

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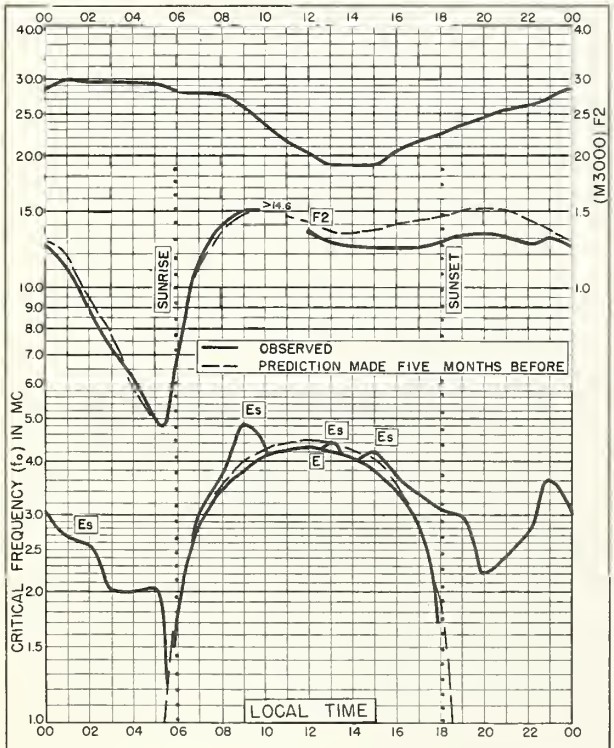

Fig. 127. SINGAPORE, BRITISH MALAYA
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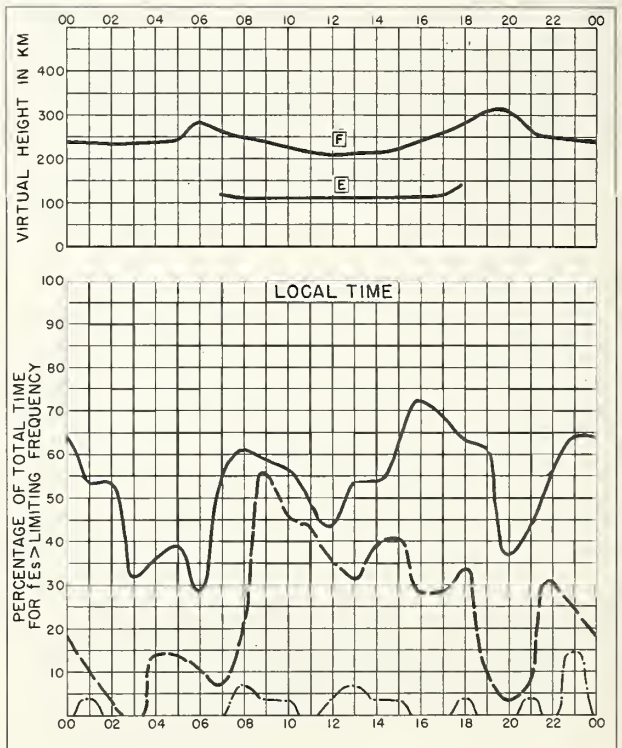
NBS 503



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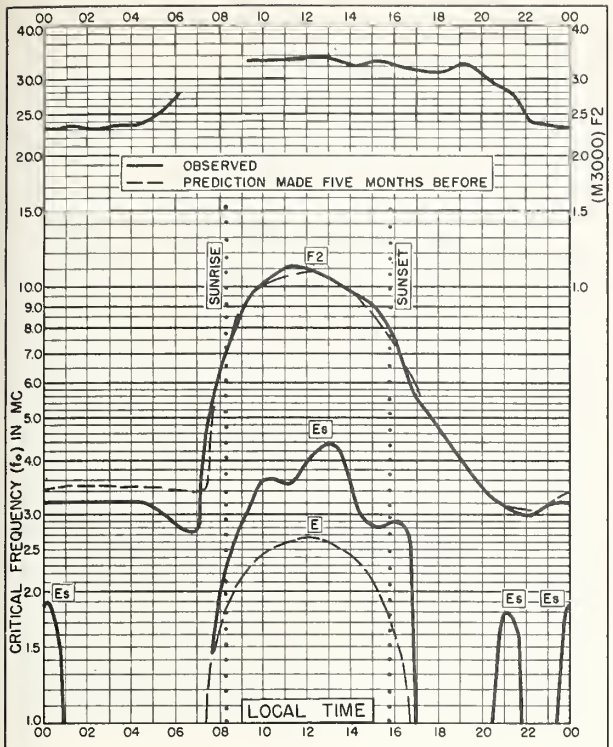

Fig. 129. FALKLAND IS.
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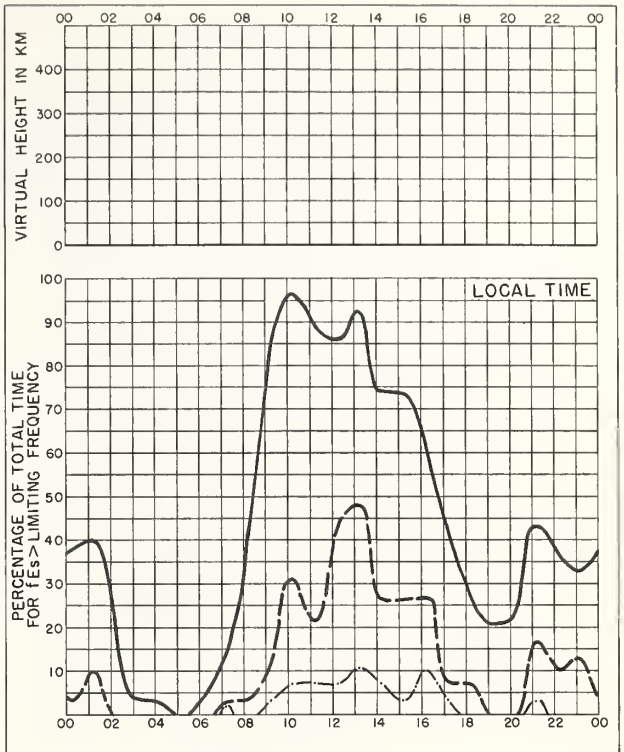

Fig. 130. FALKLAND IS. JUNE 1957

NBS 490

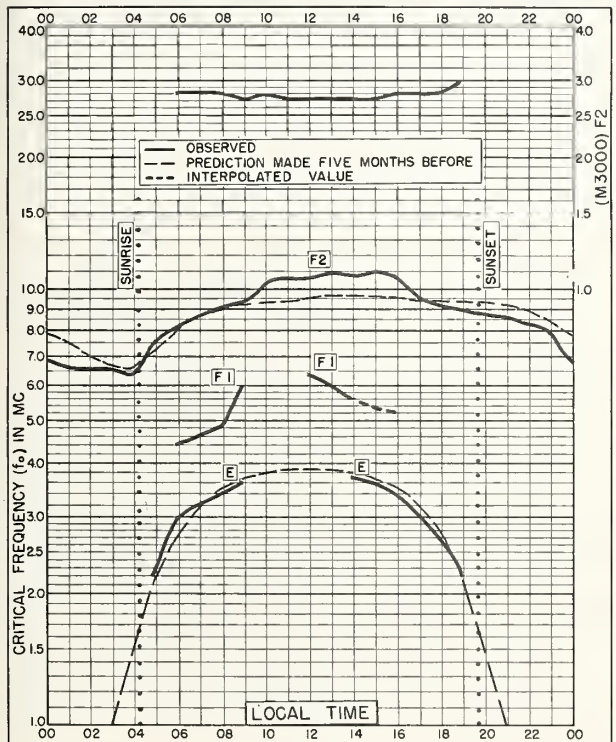

Fig. 131. IRKUTSK, U.S.S.R.
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NBS 503

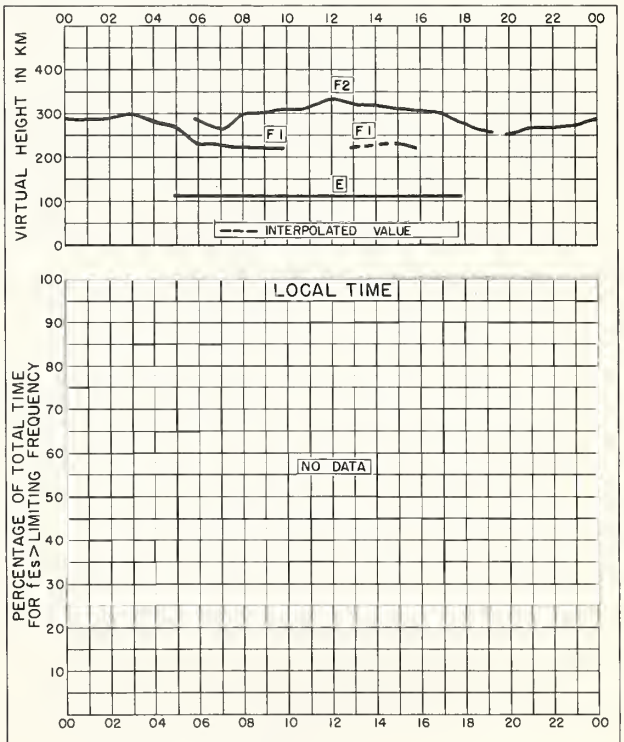

Fig. 132. IRKUTSK, U.S.S.R. MAY 1957

NBS 490

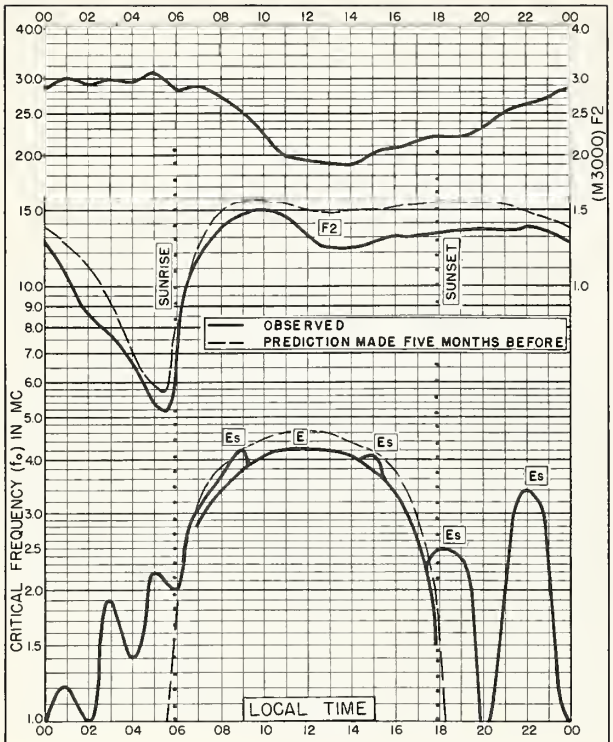

Fig. 133. SINGAPORE, BRITISH MALAYA
1.3°N, 103.8°E MAY 1957

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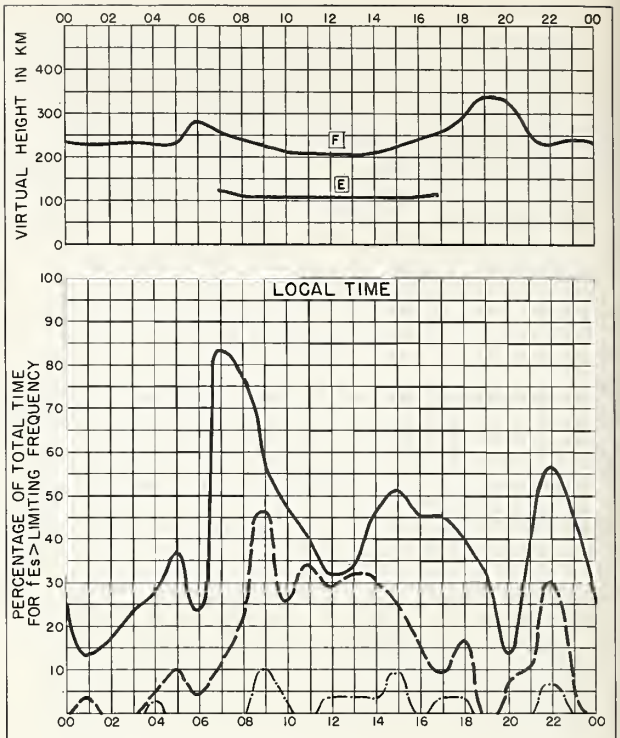

Fig. 134. SINGAPORE, BRITISH MALAYA MAY 1957

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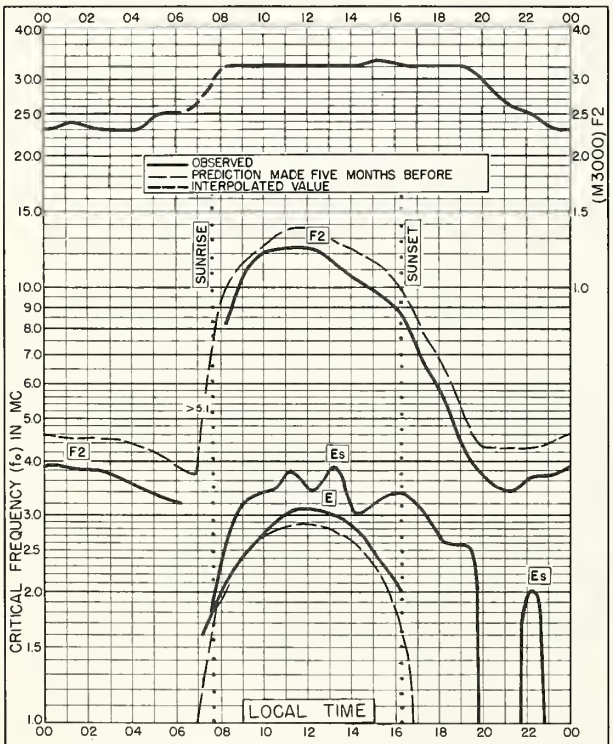

Fig. 135. FALKLAND IS.
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NBS 503

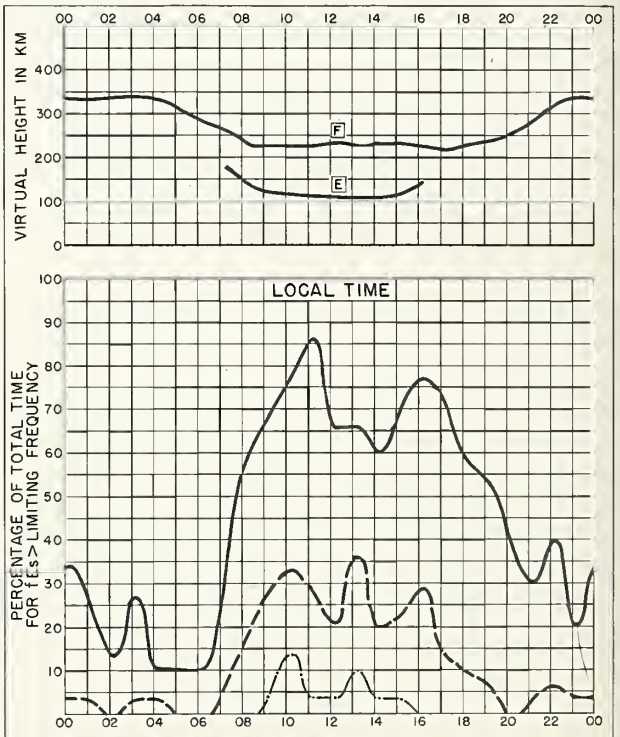

Fig. 136. FALKLAND IS. MAY 1957

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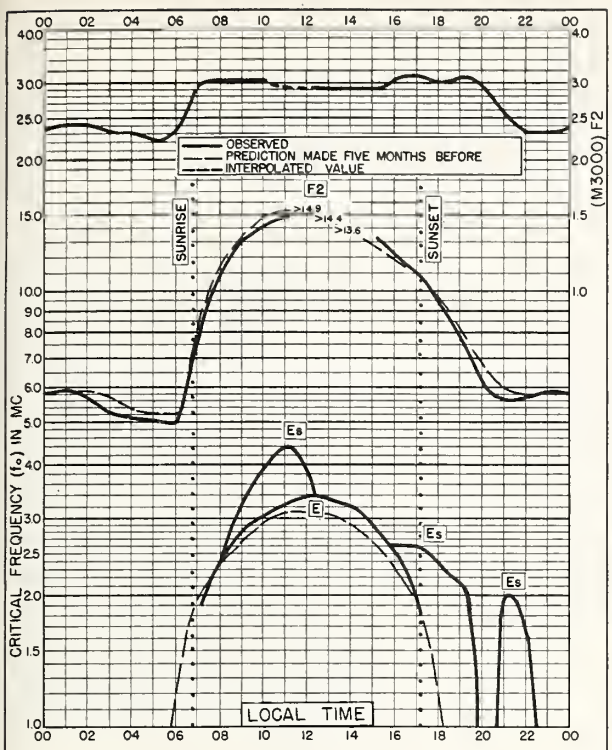

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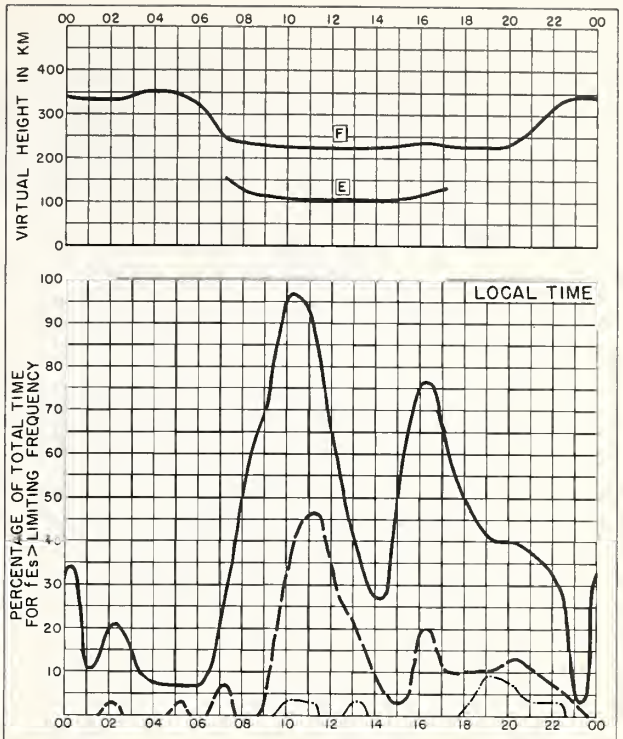

Fig. 138. FALKLAND IS. APRIL 1957

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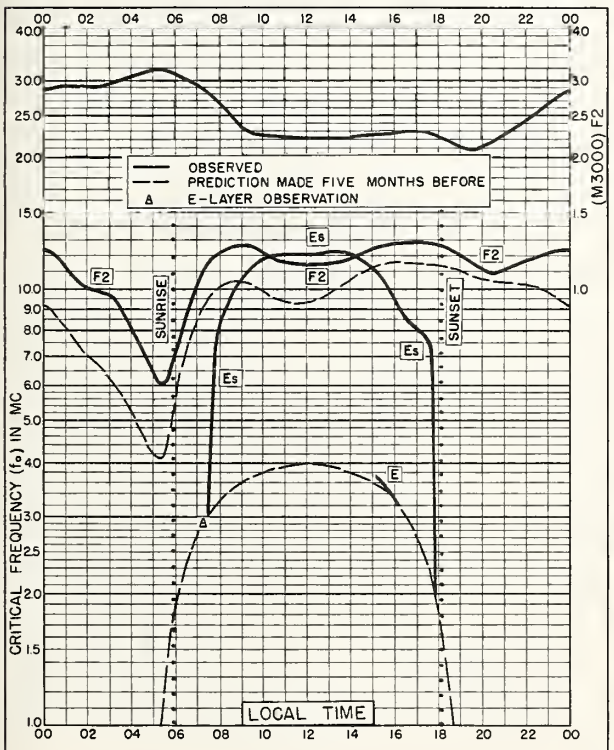

Fig. 139. KODAIKANAL, INDIA
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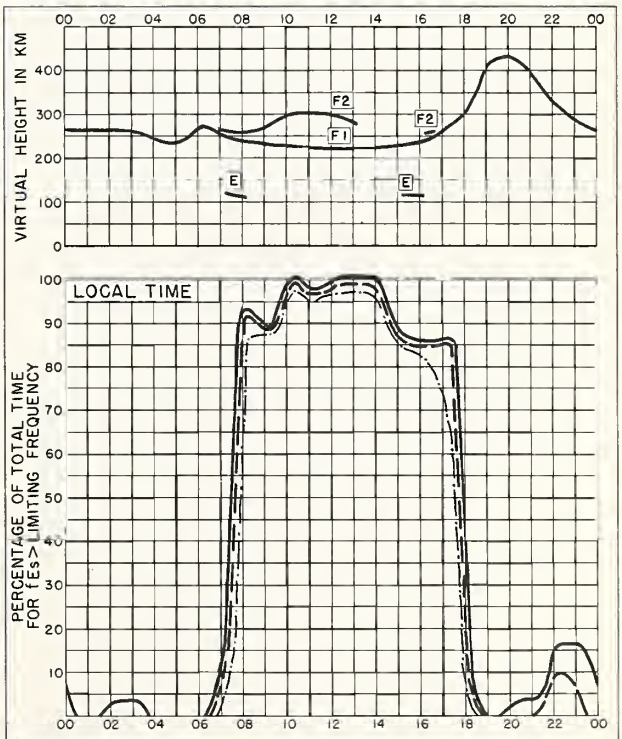

Fig. 140. KODAIKANAL, INDIA APRIL 1956

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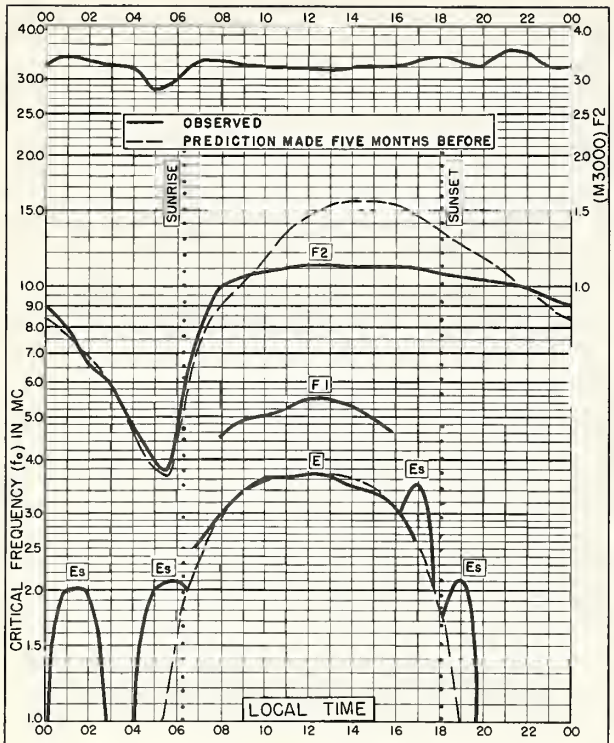

Fig. 141. CALCUTTA, INDIA
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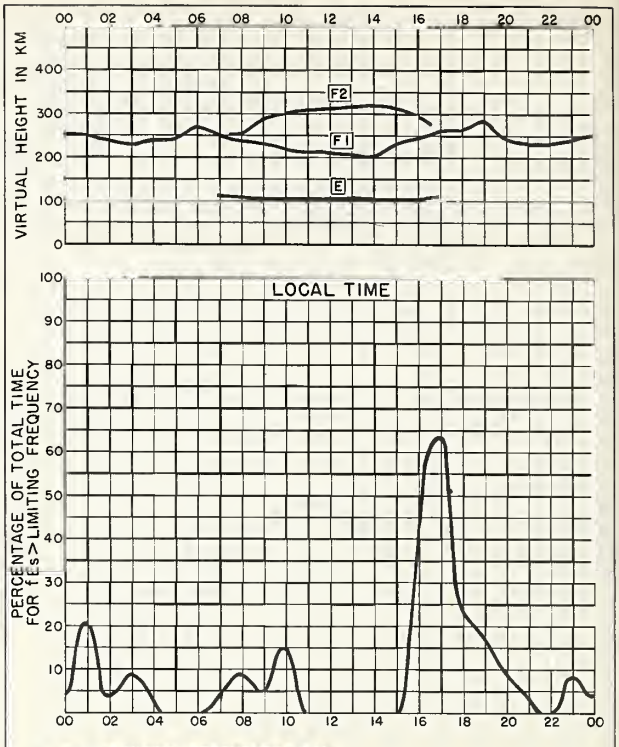

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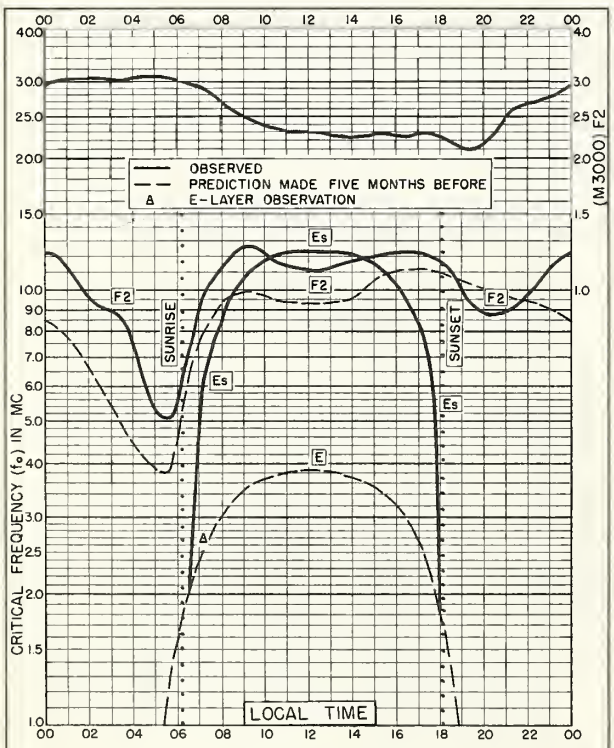

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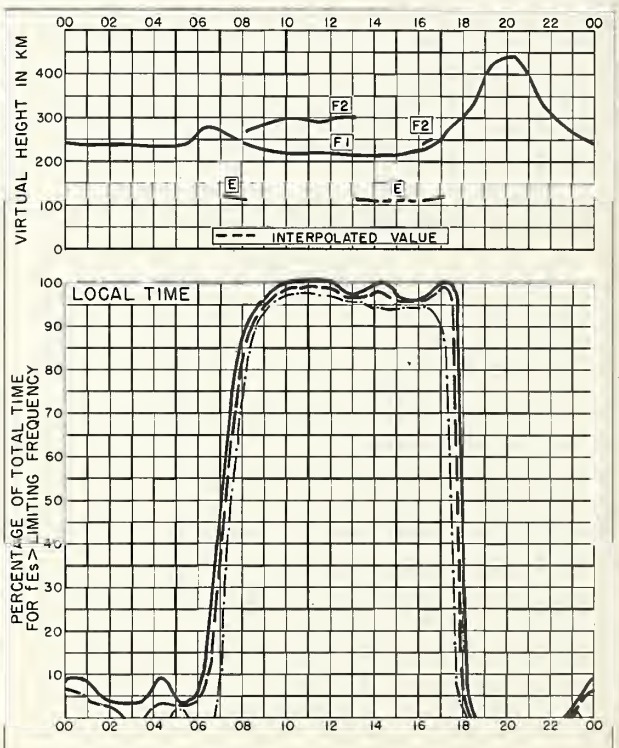

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[A detailed list of CRPL publications is available from the Central Radio Propagation Laboratory upon request]

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